ENERGY ENGINEERING ANALYSIS PROGRAM (EEAP)

ENERGY SAVINGS OPPORTUNITY SURVEY (ESOS)

FORT RUCKER, ALABAMA

EXECUTIVE SUMMARY

1987

DEFINITION STATISTICS A
Approved for public release;
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Ву

ENVIRONMENTAL CONTROL SECTION MOBILE DISTRICT CORPS OF ENGINEERS

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EXECUTIVE SUMMARY

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1. INTRODUCTION

This report presents the results and recommendations of an Energy Savings

Opportunity Survey performed under the Energy Engineering Analysis Program

(EEAP) at Fort Rucker, Alabama.

The report consists of an executive summary and six volumes. The Executive Summary presents a brief overview of the entire report.

Volume I includes the following five sections.

Section 1 describes the general features of the energy study and the methods used to accomplish the work.

Section 2 provides a general description of the present conditions of the facilities considered in this survey.

Section 3 summarizes prior energy studies.

Section 4 describes methods of analysis used to evaluate each Energy Conservation Opportunity (ECO).

Section 5 contains the recommendations and conclusions of the Energy
Savings Opportunity Survey (E.S.O.S.).

Appendix A includes a copy of the Energy Savings Opportunity Survey scope of work.

Volumes II and III include a complete description of each ECO with supporting calculations.

Volume IV includes a complete description of each Energy Monitoring and Control System (EMCS) related ECO with supporting calculations.

Volume V consists of project documentation developed for feasible ECO's (SIR greater than or equal to one).

Volume VI consists of EMCS project documentation developed for feasible EMCS ECO's (SIR greater than or equal to one).

2. PROJECT APPROACH

The field survey was accomplished by a multi-discipline team of engineers from the Engineering Division at the Mobile District. Energy conservation opportunities provided on the ECO checklist (Table ES-1) were grouped into categories by discipline for investigation and project development prior to the site visits.

A meeting was held with the DEH and his utility/energy staff to discuss specific requirements for gathering field data, to coordinate activities, and

to introduce the study team to the staff. Arrangements were made to obtain building drawings and energy utilization records. Areas of potential energy savings opportunities were discussed in order to plan strategy and procedures. Each ECO was investigated by team members in accordance with the checklist provided. Data was collected by direct investigation and measurement. Available construction drawings were obtained for evaluation and analysis of ECO's.

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BUILDING NUMBER

MECHANICAL (CONTINUED)

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	113 113 113 113		106 113	113		113	113		1102 1102 1102 1102
	106 106 106 106		106	106		106	106		311 311 311
HVAC SYSTEM CONTROL	38. UPGRADE HVAC CONTROLS: 39. DINING ROOM OPERATIONS: 40. HVAC OPERATIONS: 41. EMCS: 44. NIGHT SETBACK CONTROL:	MISCELLANEOUS	46. INFRARED HEATERS: 47. SOLAR WATER HEATING:	40. WOOD CALF/REFUSE ALA: 49. PIPE INSULATION: 50. FIX LEAKING CW PUMP: 51. STOCK ROOM VENTILATION:	HEAT RECOVERY	52. GENERAL:	53. HUI KEKRIG, GAS: 54. DISHWASHER: 55. KITCHEN EXHAUST: 56. HYDRLIC SYS HEAT RCVRY:	BOILER	57. REVISE BOILER CONTROLS: 58. BOILER TRIM CONTROL: 59. RETURN CONDENSATE: 60. INSULATE STEAM LINES:

3. RESULTS AND RECOMMENDATIONS

This study produced projects which will result in energy dollar savings of \$95,564 per year. Total estimated implementation cost for all recommended projects is \$425,178. The simple payback for all recommended projects is, therefore, 4.45 years. It should be noted that neither projects arising from the Black and Veatch study nor projects with redundant energy savings were included in these figures.

Figure 1 (page ES-8) shows graphically the energy savings predicted by the ESOS as a fraction of the total Fort Rucker energy usage (including all facilities under Fort Rucker jurisdiction). Figure 2 (page ES-9) shows the cumulative dollar savings predicted by the ESOS compared to the construction cost over a 25 year period. Note that the composite payback is indicated graphically between years 5 and 6.

The recommended projects are summarized in Tables ES-2, ES-3, and ES-4 (pages ES-10 through ES-18). Table ES-2 is organized by building then by descending SIR. Table ES-3 is organized by project then by descending SIR. Table ES-3 is organized by descending SIR. These tables include only the projects that have a savings to investment ratio (SIR) greater than one. These tables include annual energy savings, annual dollar savings, simple payback in years, savings to investment ratio (SIR), contract and cost.

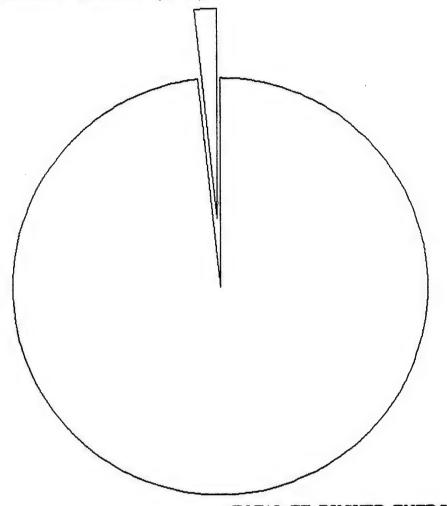
With the exception of the EMCS energy conservation opportunities, all energy conservation opportunities are summarized in Table ES-5 (page ES-19). The results for the EMCS energy conservation opportunities are summarized in Table

ES-6 (page ES-30). The remarks column indicates whether or not the project is recommended. If the project was not evaluated the remarks column will briefly state the reason.

Updated results of the Black and Veatch Basewide Energy Systems Plan (December 1982) are included in this study.

E.S.O.S. ENERGY SAVINGS

VS TOTAL FT RUCKER ENERGY USAGE E.S.O.S. ENERGY SAVINGS (1.7%)



TOTAL FT RUCKER ENERGY USAGE (98.3%)

FIGURE 1

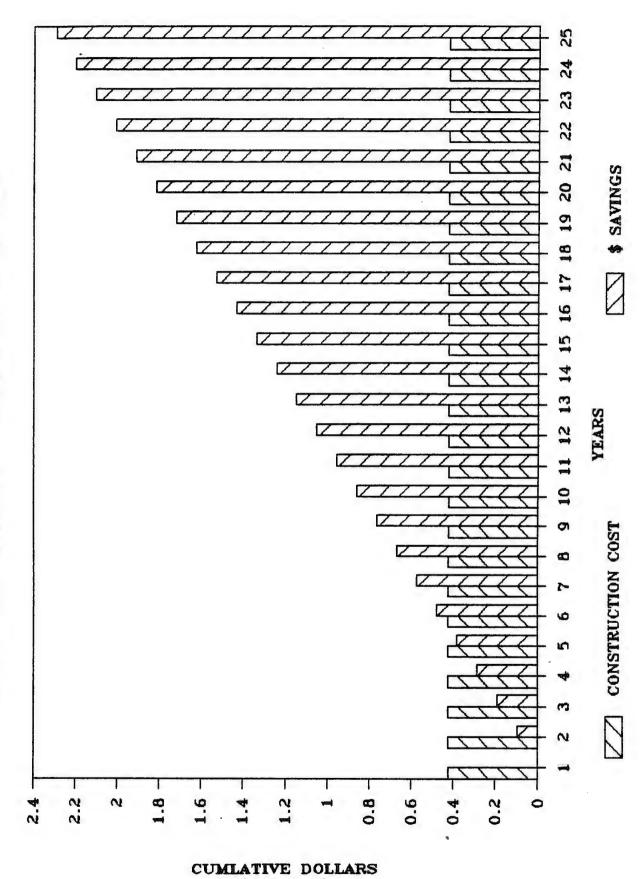


FIGURE 2

(Millions)

ECO SUMMARY OF RECOMMENDED PROJECTS
ORGANIZED BY BUILDING NUMBER THEN BY DESCENDING SAVINGS TO INVESTMENT RATIO

BUILDING NUMBER	PROJECT	DESCRIPTION	ENERGY SAVINGS MBTU/YR	DOLLAR SAVINGS PER YR	PAYBACK YEARS	SIR	CONTRACT COST DOLLARS
106	44.00	NIGHT SETBACK	190.0	767.0	09.0	19.32	457
106	19.00	WATER HEATER INSULATION	10.0	38.2	0.71	12.93	27
106	22.00	LOWER DOM HW TEMP	24.0	41.1	1.22	8.02	50
***	23.00	HW ROOSTERS	0.69 -	263.0	1.27	5.29	333
	00-67	PIPE INSULATION	32.4	123.4	2.67	4.50	330
	2.10	VESTIBILE-EAST	14.2	0.09	3.83	4.28	230
106	40.00	HVAC OPERATIONS	31.8	95.0	0.32	3.12	30
113	40.00	HVAC OPERATIONS	341.4	1271.0	0.02	42.71	30
113	35.00	ECONOMIZER CYCLE	1595.1	6061.0	0.32	26.36	1955
113	22.10	LOWER DOM HW TEMP-RESTRMS	12.0	2.4	20.49	6.18	50
113	44.00	NIGHT SETBACK	296.0	1051.0	3.47	3.41	3652
113	41.13	PKG 13-EMCS	0.0	6214.0	0.00	4.54	12421
113	27.00	CHANGE TO VAV SYSTEM	2010.7	7661.0	2.56	3.32	19639
113	31.00	AIR CURTAINS	43.0	186.4	8.13	1.98	1515
113	52.00	KITCHEN HEAT RECOVERY	81.0	462.0	10.97	1.27	2067
311	60.01	INSULATE STEAM LINES	21.0	103.0	2.21	8.61	228
311	60.03	INSULATE STEAM LINES	21.0	103.0		8.61	228
311	90.09		15.0	73.0	2.88	6.67	210
311	60.05	INSULATE STEAM LINE	30.0	143.0	2.94	6.55	420
311	60.04	INSULATE STEAM LINES	24.0	116.0		5.72	385
311	60.02	STEAM	3.0	12.0		1.34	175
							10
2908		HVAC OPERATIONS	191.8	701.0	0.04	23.53	30
2908		LOWER DOM HW TEMP-KITCHEN	16.0	20.8	2.40	11.03	20
2908		PKG 13-EMCS	0.0	6876.0	0.00	5.03	12421
2908	35.00	ECONOMIZER CYCLE	765.3	2916.0	2.18	3.91	6346
2908	27.00	CHANGE TO VAV SYSTEM	1141.3	4348.0		3.01	12274
2908	31.00	AIR CURTAINS	78.0	337.0	8.80	1.66	2967
2908	00.9	WEATHER STRIPPING	5.2	22.0	4.14	1.09	91
4511	00.9	WEATHER STRIPPING	14.2	0.09	2.48	1.83	149
4701	60.02	INSULATE STEAM LINES	26.3	126.0	0.37	59.25	97
4701	59.01	RETURN CONDENSATE	7.0	35.0	0.63	29.83	22
4701	59.02	RETURN CONDENSATE	7.0	35.0	0.63	29.83	22
4701	60.04	INSULATE STEAM LINES	19.0	92.0		8.62	204
4701	60.01	INSULATE STEAM LINES	31.0	151.0		7.16	406
4701	60.03	INSULATE STEAM LINES	3.0	12.0		1.34	175
					6	,	
7.003	26 00	THE PARTY OF THE P					

ABLE ES-2

ECO SUMMARY OF RECOMMENDED PROJECTS
ORGANIZED BY BUILDING NUMBER THEN BY DESCENDING SAVINGS TO INVESTMENT RATIO

BUILDING NUMBER	PROJECT NUMBER	DESCRIPTION	ENERGY SAVINGS MBTU/YR	DOLLAR SAVINGS PER YR	PAYBACK YEARS	SIR	CONTRACT COST DOLLARS
5202	34.00	SEAL AIR HANDLING UNIT LEAKS	41.0	175.0	0.41	29.53	72
5202	50.00	FIX LEAKING CW PUMP	1.6	6.2	3.69	1.08	23
5202	00.9	WEATHER STRIPPING	6.4	21.0	4.33	1.04	91
5203	34.00	SEAL AIR HANDLING UNIT LEAKS	0.9	28.0	1.25	6.17	35
5205	50.00	FIX LEAKING CW PUMP	1.6	6.2	3.69	1.08	23
5205	00.9	WEATHER STRIPPING	6.4	21.0	4.33	1.04	91
5206	34.00	SEAL AIR HANDLING UNIT LEAKS	41.0	175.0	0.41	29.53	72
5206	20.00	FIX LEAKING CW PUMP	1.6	6.2	3.69	1.08	23
6021	59.01	RETURN CONDENSATE	73.0	349.0	0.07	277.00	24
6021	59.03	RETURN CONDENSATE	120.0	528.0	0.50	38.42	265
6021	59.02	RETURN CONDENSATE	7.0	35.0	0.63	29.83	22
6021	00.09	INSULATE STEAM LINE	13.0	0.09	2.35	8.16	141
9224	5.00	CAULKING	28.8	125.0	0.51	34.48	99
9227	5.00	CAULKING	23.5	102.0	0.83	20.89	85
9227	40.00	HVAC OPERATIONS	93.7	402.0	0.07	13.63	30
9227	49.00	PIPE INSULATION	49.3	224.0	2.12	11.33	475
9227	22.10	LOWER KITCHEN HW TEMP	15.0	20.0	2.50	10.81	20
9227	13.00	REPLACE INCAN W/FLUORESCENT	27.6	299.0	1.00	9.04	298
9227	19.10	INSULATE WATER HEATER-KITCHEN		14.8	1.83	8.06	27
9227	19.20	INSULATE WATER HEATER-PIN ROOM		8.2	3.28	4.50	27
9227	23.00	HOT WATER BOOSTERS	11.0	88.0	3.78	3.78	333
9227	44.00	NIGHT SETBACK	29.0	77.0	5.94	2.68	457
9227	31.00	AIR CURTAINS	26.0	109.8	13.80	1.20	1515
20020	22.20	LOWER DOM HW TEMP-LKR/RRMS	0.06	293.5	0.17	51.52	20
20020	40.00	HVAC OPERATIONS	171.8	624.0	0.05	20.95	30
20020	49.00	PIPE INSULATION	17.2	117.7	1.00	19.50	118
20020	19.10	INSULATE WATER HEATER-KITCHEN	14.0	51.7	0.52	17.52	27
20020	22.10	LOWER DOM HW TEMP-KIT	36.0	86.4	0.58	15.83	20
20020	44.00	NIGHT SETBACK	114.0	519.0	0.88	11.71	457
20020	19.20	INSULATE WATER HEATER-LOCKERS	4.0	16.5	1.64	5.58	27
20020	00.9	WEATHER STRIPPING	1.6	10.0	1.70	2.63	17
30101	40.00	HVAC OPERATIONS	594.3	2234.0	0.01	75.10	30
30101	49.00	PIPE INSULATION	18.4	117.0	1.07	17.85	125
30101	23.00	HOT WATER BOOSTERS	39.0	428.0	0.78	11.06	333
30101	22.00	LOWER DOMESTIC HW TEMP	11.0	23.1	2.17	8.97	20
30101	19.00	WATER HEATER INSULATION	1.0	9.9	4.11	3.01	27
30101	52.00	KITCHEN HEAT RECOVERY	116.0	941.0	8.25	1.41	7760
30101	8.00	STORM WINDOWS	17.6	893.0	15.04	1.30	13433

ECO SUMMARY OF RECOMMENDED PROJECTS
ORGANIZED BY BUILDING NUMBER THEN BY DESCENDING SAVINGS TO INVESTMENT RATIO

BUILDING NUMBER	PROJECT	DESCRIPTION	ENERGY SAVINGS MBTU/YR	DOLLAR SAVINGS PER YR	PAYBACK YEARS	SIR	CONTRACT COST DOLLARS
40110	40.00	HVAC OPERATIONS	63.1	210.0	0.14	7.02	30
40110		HOT WATER BOOSTERS	7.0	207.0	1.61	5.75	333
40110		WATER HEATER INSULATION	1.0	8.4	3.23	3.84	27
40110		STORM WINDOWS	55.3	376.0	8.04	2.07	3024
40110	3	BALANCE HVAC SYSTEM	100.2	583.0	3.23	1.29	1883
50101	22.00	LOWER DOMESTIC HW TEMP	27.0	134.5	0.37	34.36	50
50101		WATER HEATER INSULATION	4.0	25.0	1.08	11.48	27
50101		HOT WATER BOOSTERS	35.0	401.0	0.83	10.40	333
50101		STORM WINDOWS	79.7	542.0	8.44	1.97	4575
50101	2	KITCHEN HEAT RECOVERY	84.0	701.0	8.87	1.31	6221
HANGARS BASEWIDE	SEWIDE						
30101	12.01	EFFICIENT LIGHTING (HANGAR)	269.9	2194.0	7.30	1.57	16009
30103	_	EFFICIENT LIGHTING	269.9	2194.0	7.30	1.57	16009
30104		EFFICIENT LIGHTING	269.9	2194.0	7.30	1.57	16009
30106		EFFICIENT LIGHTING	301.6	2508.0	7.27	1.58	18246
30108		EFFICIENT LIGHTING	301.6	2508.0	7.27	1.58	18246
30301		EFFICIENT LIGHTING	641.3	2359.0	10.26	1.08	24211
30303		EFFICIENT LIGHTING	1375.8	5309.0	4.56	2.45	24211
40113			269.9	2194.0	7.30	1.57	16009
40117			269.9	2194.0	7.30	1.57	16009
40120			269.9	2194.0	7.30	1.57	16009
60104		EFFICIENT LIGHTING	398.4	1640.0	5.99	1.87	9825
60105	12.12	EFFICIENT LIGHTING	398.4	1640.0	5.99	1.87	9825
** B&V	BV-2.05	WH INSUL-120 GAL NG	11.1	50.0	0.58	25.19	29
** B&V	BV-2.03	WH INSUL-80 GAL NG	9.8	39.0	99.0	22.43	2.5
** B&V	BV-2.01	WH INSUL-40 GAL NG	6.2	28.0	0.79	18.72	22
** B6V	BV-2.06	WH INSUL-120 GAL EL	6.2	24.0	1.29	06.9	31
** B&V	BV-2.04	WH INSUL-80 GAL EL	4.7	18.0	1.44	60.9	56
	BV-2.02	WH INSUL-40 GAL EL	3.3	13.0	1.69	2.06	22
** B&V	BV-4.00	ROOF SPRAY COOLING	118.0	0.799	13.35	1.26	9039
*, ** B&V	BV-5.00	FLUSH VALVE RESTRICTORS	8,619,840 GAL.	4944.0	3.28	3.54	16226
k B&V	BV-6.00	FLUOR LIGHTING LOAD RED.	15161.3	50769.0	6.85	1.26	347582
			(500)	50	22.5		in the same
NOTE:							

There are no energy savings associated with project BV-5.00. Savings are in gallons of water.

This project is originally from the Black and Veatch Basewide Energy Plan. The costs were escalated to today's dollars and then a new life cycle cost analysis was performed in accordance with the scope of work.

Overlap of energy savings occurs between ECO 22 and 23 for building 106. For this reason, the ECO with the highest SIR is recommended. ***

ECO SUMMARY OF RECOMMENDED PROJECTS
ORGANIZED BY PROJECT NUMBER THEN BY DESCENDING SAVINGS TO INVESTMENT RATIO

BUI	BUILDING	PROJECT	DESCRIPTION	SAVINGS MBTU/YR	SAVINGS PER YR	YEARS	WT C	COST
4			ON 140 Of HIGHT HIS	6 4	0 80	0 7 0	18 72	22
	DOV	TO. 2-VG	THO OF-TOCHT	7 0	0.07		200	
*	P&V	BV-2.02	INSUL-40 GAL	5.5	13.0	1.09	00.00	77
***	B&V	BV-2.03		8.6	39.0	0.64	77.43	67
**	B&V	BV-2.04	WH INSUL-80 GAL EL	4.7	18.0	1.44	60.9	26
*	B&V	BV-2.05	WH INSUL-120 GAL NG	11.1	50.0	0.58	25.19	29
**	B&V	BV-2.06	WH INSUL-120 GAL EL	6.2	24.0	1.29	6.90	31
	106	2.10	VESTIBULE-EAST	14.2	0.09	3.83	4.28	230
**	B&V	BV-4.00	ROOF SPRAY COOLING	118.0	677.0	13.35	1.26	9039
	9226	5.00	CAULKING	28.8	125.0	0.51	34.48	99
	9227	5.00	CAULKING	23.5	102.0	0.83	20.89	85
**		BV-5.00	LVE RESTRICTORS	8,619,840 GAL.	0.4964	3.28	3.54	16226
	\sim	00-9		1.6	10.0	1.70	2.63	17
	4511	00.9	WEATHER STRIPPING	14.2	0.09	2.48	1.83	149
	2908	00-9		5.2	22.0	4.14	1.09	91
	5202	00.9	WEATHER STRIPPING	4.9	21.0	4.33	1.04	91
	5205	00.9	WEATHER STRIPPING	4.9	21.0	4.33	1.04	91
**	BAV	BV-6.00	FLUOR LIGHTING LOAD RED.	15161.3	50769.0	6.85	1.26	347582
	40110	8.00	STORM WINDOWS	55.3	376.0	8.04	2.07	3024
	50101	8.00	STORM WINDOWS	7.67	542.0	8.44	1.97	4575
	30101	8.00	STORM WINDOWS	77.6	893.0	15.04	1.30	13433
	30101	12.01	EFFICIENT LIGHTING (HANGAR)	269.9	2194.0	7.30	1.57	16009
	30103	12.02	EFFICIENT LIGHTING	269.9	2194.0		1.57	16009
	30104	12.03	EFFICIENT LIGHTING	569.6	2194.0		1.57	16009
	30106	12.04	EFFICIENT LIGHTING	301.6	2508.0	7.27	1.58	18246
	30108	12.05	EFFICIENT LIGHTING	301.6	2508.0	7.27	1.58	18246
	30301	12.06		641.3	2359.0	10.26	1.08	24211
	30303	12.07	EFFICIENT LIGHTING	1375.8	5309.0	4.56	2.45	24211
	40113	12.08	EFFICIENT LIGHTING	269.9	2194.0		1.57	16009
	40117	12.09	EFFICIENT LIGHTING	269.9	2194.0		1.57	16009
	40120	12.10	EFFICIENT LIGHTING	269.9	2194.0		1.57	16009
	60104	12.11	EFFICIENT LIGHTING	398.4	1640.0		1.87	9825
	60109	12.12	EFFICIENT LIGHTING	398.4	1640.0	5.99	1.87	9825
	9227	13.00	REPLACE INCAN W/FLUORESCENT	27.6	299.0	1.00	9.04	298
	106	19.00	WATER HEATER INSULATION	10.0	38.2	0.71	12.93	27
	50101	19.00	WATER HEATER INSULATION	4.0	25.0	1.08	11.48	27
	40110	19.00	WATER HEATER INSULATION	1.0	8.4	3.23	3.84	27
	30101	19.00	WATER HEATER INSULATION	1.0	9.9	4.11	3.01	27
	20020	19.10	INSULATE WATER HEATER-KITCHEN	-	51.7	0.52	17.52	27
	9227	19.10	INSULATE WATER HEATER-KITCHEN		14.8	1.83	8.06	27
	20020	19.20	INSULATE WATER HEATER-LOCKERS		16.5	1.64	5.58	27
	9227	19.20	INSULATE WATER HEATER-PIN ROOM	00M 2.0	8.2	3.28	4.50	27
	50101	22.00	LOWER DOMESTIC HW TEMP	27.0	134.5	0.37	34.36	20
	2908	22.00	LOWER DOM HW TEMP-KITCHEN	16.0	20.8	2.40	11.03	20
	30101	22.00	LOUPE DOMESTIC UN TEMP	0 11	23 1	2 17	A 97	20
			TOWNS TOWNS TOWNS	> T T	1.07	1 1 0 7	1000	2

		ORGANIZ	ECO SUMMARY OF RECOMMENDED PROJECTS ORGANIZED BY PROJECT NUMBER THEN BY DESCENDING SAVINGS TO INVESTMENT RATIO	COMMENDED	PROJECTS SAVINGS TO	INVESTMENT	RATIO	
RII	RITTDING	PROTECT	DESCRIPTION	ENERGY	DOLLAR	PAYBACK	SIR	CONTRACT
2	NIMBER	NIMBER	NOT THE PROPERTY OF THE PROPER	SAVINGS	SAVINGS			COST
		N T T T T T T T T T T T T T T T T T T T		MBTU/YR	PER YR			DOLLARS
				,,	0	0	16 00	ď
	2002	22.10	LOWER DOM HW IEMF-KII	20.00	4.00	0.0	10.03	00
	1776	22.10	LOWER ALICHEN HW LEMP	10.0	0.02	20.70	10.01	00
	113	22.10	LOWER DOM HW TEMP-RESTRMS	12.0	7.7	20.49	91.0	00
	20020	22.20	LOWER DOM HW TEMP-LKR/RRMS	0.06	293.5	0.17	51.52	20
	30101	23.00	HOT WATER BOOSTERS	39.0	428.0	0.78	11.06	333
	50101	23.00	HOT WATER BOOSTERS	35.0	401.0	0.83	10.40	333
	40110	23.00	HOT WATER BOOSTERS	7.0	207.0	1.61	5.75	333
***	106	23.00	HW BOOSTERS	0.69	263.0	1.27	5.29	333
	9227	23.00	HOT WATER BOOSTERS	11.0	88.0	3.78	3.78	333
	113	27.00	CHANGE TO VAV SYSTEM	2010.7	7661.0	2.56	3.32	19639
	2908	27.00	CHANGE TO VAV SYSTEM	1141.3	4348.0	2.82	3.01	12274
	113	31.00	AIR CURTAINS	43.0	186.4	8.13	1.98	1515
	2908	31.00	AIR CURTAINS	78.0	337.0	8.80	1.66	2967
	9227	31.00	AIR CURTAINS	26.0	109.8	13.80	1.20	1515
	5202	34.00	SEAL AIR HANDLING UNIT LEAKS		175.0	0.41	29.53	7.2
	5206	34.00	SEAL AIR HANDLING UNIT LEAKS	41.0	175.0	0.41	29.53	72
	5203	34.00	HANDLING UNIT		28.0	1.25	71.6	35
	113	35.00	ECONOMIZER CYCLE	1595.1	6061.0	0.32	26.36	1955
	2908	35.00	ECONOMIZER CYCLE	765.3	2916.0	2.18	3.91	6346
	40110	36.00	BALANCE HVAC SYSTEM	100.2	583.0	3.23	1.29	1883
	30101	40.00	HVAC OPERATIONS	594.3	2234.0	0.01	75.10	30
	113	40.00	HVAC OPERATIONS	341.4	1271.0	0.02	42.71	30
	2908	40.00	HVAC OPERATIONS	191.8	701.0	0.04	23.53	30
	20020	40.00		171.8	624.0	0.05	20.95	30
	9227	40.00	HVAC OPERATIONS	93.7	402.0	0.07	13.63	30
	40110	40.00	HVAC OPERATIONS	63.1	210.0	0.14	7.02	30
	106	40.00	HVAC OPERATIONS	31.8	95.0	0.32	3.12	30
	2908	41.13	PKG 13-EMCS	0.0	6876.0	00.0	5.03	12421
	113	41.13	PKG 13-EMCS	0.0	6214.0	00.0	4.54	12421
	106	44.00	NIGHT SETBACK	190.0	767.0	09.0	19.32	457
	20020	44.00		114.0	519.0	0.88	11.71	457
	113	44.00	NIGHT SETBACK	296.0	1051.0	3.47	3.41	3652
	9227	44.00	NIGHT SETBACK	29.0	77.0	5.94	2.68	457
	20020	49.00	PIPE INSULATION	17.2	117.7	1.00	19.50	118
	30101	49.00	PIPE INSULATION	18.4	117.0	1.07	17.85	125
	9227	49.00	PIPE INSULATION	49.3	224.0	2.12	11.33	475
	106	49.00	PIPE INSULATION	32.4	123.4	2.67	4.50	330
	5202	50.00	FIX LEAKING CW PUMP	1.6	6.2	3.69	1.08	23
	5205	50.00	FIX LEAKING CW PUMP	1.6	6.2	3.69	1.08	23
	5206	50.00	FIX LEAKING CW PUMP	1.6		3.69	1.08	23
	30101	52.00	KITCHEN HEAT RECOVERY	116.0		8.25	1.41	1760
	50101	52.00	KITCHEN HEAT RECOVERY	84.0		8.87	1.31	6221
	113	52.00	KITCHEN HEAT RECOVERY	81.0		10.97	1.27	2067
	4901	96.00	HYDRAULIC SYSTEM HEAT RECOVERY 2894.0	3RY 2894.0	13552.0	7.30	1.93	98995

ECO SUMMARY OF RECOMMENDED PROJECTS ORGANIZED BY PROJECT NUMBER THEN BY DESCENDING SAVINGS TO INVESTMENT RATIO

UILDING PROJECT NUMBER NUMBER	DESCRIPTION	ENERGY SAVINGS MBTU/YR	DOLLAR SAVINGS PER YR	PAYBACK YEARS	SIR	CONTRACT COST DOLLARS
u	RETHRN CONDENSATE	73.0	349.0	0.07	277.00	24
, .	RETURN CONDENSATE	7.0	35.0	0.63	29.83	22
	RETURN CONDENSATE	7.0	35.0	0.63	29.83	22
, 4	RETIRN CONDENSATE	7.0	35.0	0.63	29.83	22
, 4	RETURN CONDENSATE	120.0	528.0	0.50	38.42	265
, 4	INSULATE STEAM LINE	13.0	0.09	2.35	8.16	141
	INSULATE STEAM LINES	21.0	103.0	2.21	8.61	228
	TEAM	31.0	151.0	2.69	7.16	406
, 4	TEAM	26.3	126.0	0.37	59.25	95
, «	TEAM	3.0	12.0	14.58	1.34	175
, «	TEAM	21.0	103.0	2.21	8.61	228
, .	TEAM	3.0	12.0	14.58	1.34	175
	TEAM	19.0	92.0	2.22	8.62	204
, ,	TEAM	24.0	116.0	3.32	5.72	385
1 60.05	INSILATE STEAM LINE	30.0	143.0	2.94	6.55	420
311 60.06	TEAM	15.0	73.0	2.88	6.67	210

NOTE:

There are no energy savings associated with project BV-5.00. Savings are in gallons of water.

This project is originally from the Black and Veatch Basewide Energy Plan. The costs were escalated to today's dollars and then a new life cycle cost analysis was performed in accordance with the scope of work. **

Overlap of energy savings occurs between ECO 22 and 23 for building 106. For this reason, the ECO with the highest SIR is recommended. ***

ECO SUMMARY OF RECOMMENDED PROJECTS
ORGANIZED BY DESCENDING SAVINGS TO INVESTMENT RATIO

18	BUILDING NUMBER	PROJECT	DESCRIPTION	ENERGY SAVINGS MBTU/YR	DOLLAR SAVINGS PER YR	PAYBACK YEARS	SIR	CONTRACT COST DOLLARS
	6021	59.01	RETURN CONDENSATE	73.0	349.0	0.07	277.00	24
	30101	40.00	HVAC OPERATIONS	594.3	2234.0	0.01	75.10	30
	4701		INSULATE STEAM LINES	26.3	126.0	0.37	59.25	97
	20020		LOWER DOM HW TEMP-LKR/RRMS	0.06	293.5	0.17	51.52	20
	113		HVAC OPERATIONS	341.4	1271.0	0.02	42.71	30
	6021	'n	RETURN CONDENSATE	120.0	528.0	0.50	38.42	265
	9224		CAULKING	28.8	125.0	0.51	34.48	49
	50101		LOWER DOMESTIC HW TEMP	27.0	134.5	0.37	34.36	20
	4701		RETURN CONDENSATE	7.0	35.0	0.63	29.83	22
	4701		RETURN CONDENSATE	7.0	35.0	0.63	29.83	22
	6021		RETURN CONDENSATE	7.0	35.0	0.63	29.83	22
	5202		SEAL AIR HANDLING UNIT LEAKS	41.0	175.0	0.41	29.53	72
	5206		SEAL AIR HANDLING UNIT LEAKS	41.0	175.0	0.41	29.53	72
	113		ECONOMIZER CYCLE	1595.1	6061.0	0.32	26.36	1955
*	B&V	B	WH INSUL-120 GAL NG	11.1	50.0	0.58	25.19	29
	2908		HVAC OPERATIONS	191.8	701.0	0.04	23.53	30
*	B&V	B	WH INSUL-80 GAL NG	8.6	39.0	79.0	22.43	25
	20020	4	HVAC OPERATIONS	171.8	624.0	0.05	20.95	30
	9227		CAULKING	23.5	102.0	0.83	20.89	85
	20020		PIPE INSULATION	17.2	117.7	1.00	19.50	118
	106		NICHT SETBACK	190.0	767.0	09.0	19.32	457
*	B&V	B	WH INSUL-40 GAL NG	6.2	28.0	0.79	18.72	22
	30101		PIPE INSULATION		117.0	1.07	17.85	125
	20020		INSULATE WATER HEATER-KITCHEN		51.7	0.52	17.52	27
	20020		LOWER DOM HW TEMP-KIT	36.0	86.4	0.58	15.83	20
	9227		HVAC OPERATIONS	93.7	402.0	0.07	13.63	30
	106			10.0	38.2	0.71	12.93	27
	20020		NIGHT SETBACK	114.0	519.0	0.88	11.71	457
	50101		WATER HEATER INSULATION	4.0	25.0	1.08	11.48	27
	9227		PIPE INSULATION	49.3	224.0	2.12	11.33	475
	30101		HOT WATER BOOSTERS	39.0	428.0	0.78	11.06	333
	2908		LOWER DOM HW TEMP-KITCHEN	16.0	20.8	2.40	11.03	20
	9227		LOWER KITCHEN HW TEMP	15.0	20.0	2.50	10.81	20
	50101		HOT WATER BOOSTERS	35.0	401.0	0.83	10.40	333
	5203		SEAL AIR HANDLING UNIT LEAKS	0.9	28.0	1.25	9.77	. 35
	9227		REPLACE INCAN W/FLUORESCENT	27.6	299.0	1.00	9.04	298
	30101		LOWER DOMESTIC HW TEMP	11.0	23.1	2.17	8.97	20
	4701			19.0	92.0	2.22	8.62	204
	311			21.0	103.0	2.21	8.61	228
	311			21.0	103.0	2.21	8.61	228
	6021		INSULATE STEAM LINE		0.09	2.35	8.16	141
	9227		INSULATE WATER HEATER-KITCHEN		14.8	1.83	8.06	2.7
***	106		LOWER DOM HW TEMP	24.0	41.1	1.22	8.02	20
	4701	60.01	INSULATE STEAM LINES	31.0	151.0	2.69	7.16	406
	40110	40.00	HVAC OPERATIONS	63.1	210.0	0.14	7.02	30

ECO SUMMARY OF RECOMMENDED PROJECTS
ORCANIZED BY DESCENDING SAVINGS TO INVESTMENT RATIO

14	BUILDING NUMBER	G PROJECT R NUMBER	DESCRIPTION	ENERGY SAVINGS MBTU/YR	DOLLAR SAVINGS PER YR	PAYBACK YEARS	SIR	CONTRACT COST DOLLARS
4		70 0 44	TO OCH THOME WILL	6 9	0 %	1 20	9	3.1
K	D&V	â	THE TRANSPORT OF THE PER	7.0	20.4.0	67.1	2000	210
	311		INSULATE STEAM LINES	15.0	13.0	7.88	10.0	017
	311		INSULATE STEAM LINE	30.0	143.0	7.94	6.00	470
	113		LOWER DOM HW TEMP-RESTRMS	12.0	2.4	20.49	6.18	50
*	B&V	BV-2.04	WH INSUL-80 GAL EL	4.7	18.0	1.44	60.9	56
	40110	0 23.00	HOT WATER BOOSTERS	7.0	207.0	1.61	5.75	333
	311		INSULATE STEAM LINES	24.0	116.0	3.32	5.72	385
	20020		INSULATE WATER HEATER-LOCKERS	0.4	16.5	1.64	5.58	27
***			HW BOOSTERS	0.69	263.0	1.27	5.29	333
*	æ	BV	WH INSUL-40 GAL EL	3,0	13.0	1.69	5.06	22
	2908	00		0.0	6876.0	00.00	5.03	12421
	113		PKG 13-EMCS	0.0	6214.0	0.00	4.54	12421
	106		PIPE INSULATION	32.4	123.4	2.67	4.50	330
	9227		INSULATE WATER HEATER-PIN ROOM		8.2	3.28	4.50	27
	106		VESTIBULE-EAST	1	0.09	3.83	4.28	230
	2908	,	ECONOMIZER CYCLE	765.3	2916.0	2.18	3.91	6346
	40110		WATER HEATER INSHIATION	1.0	4.8	3,23	3.84	27
	9227		HOT WATER ROOSTERS	11.0	88.0	3.78	3.78	333
4		0		0 610 840 CAT	7,000	3 2 2	3 54	16226
×	XX BAV	2	ESTRICTORS	019,040 041.	0.444.0	07.0	10.0	07701
	113		NIGHT SETBACK	296.0	1051.0	3.4/	3.41	3652
	113		CHANGE TO VAV SYSTEM	2010.7	7661.0	2.56	3.32	19639
	106		HVAC OPERATIONS	31.8	95.0	0.32	3.12	30
	2908	8 27.00	CHANGE TO VAV SYSTEM	1141.3	4348.0	2.82	3.01	12274
	30101		WATER HEATER INSULATION	1.0	9.9	4.11	3.01	27
	9227	7 44.00	NIGHT SETBACK	29.0	77.0	5.94	2.68	457
	20020		WEATHER STRIPPING	1.6	10.0	1.70	2.63	17
	30303	_	EFFICIENT LIGHTING	1375.8	5309.0	4.56	2.45	24211
	40110		STORM WINDOWS	55.3	376.0	8.04	2.07	3024
	113	n	AIR CURTAINS	43.0	186.4	8.13	1.98	1515
	50101		STORM WINDOWS	7.67	542.0	8.44	1.97	4575
	4901	'n	HYDRAULIC SYSTEM HEAT RECOVERY	2894.0	13552.0	7.30	1.93	98995
	60104		EFFICIENT LIGHTING	398.4	1640.0	5.99	1.87	9825
	60105	5 12.12	EFFICIENT LIGHTING	398.4	1640.0	5.99	1.87	9825
	4511		WEATHER STRIPPING	14.2	0.09	2.48	1.83	149
	2908	e.	AIR CURTAINS	78.0	337.0	8.80	1.66	2967
	30106		EFFICIENT LIGHTING	301.6	2508.0	7.27	1.58	18246
	30108		EFFICIENT LIGHTING	301.6	2508.0	7.27	1.58	18246
	30101		EFFICIENT LIGHTING (HANGAR)	269.9	2194.0	7.30	1.57	16009
	30103		EFFICIENT LIGHTING	269.9	2194.0	7.30	1.57	16009
	30104		EFFICIENT LIGHTING	269.9	2194.0	7.30	1.57	16009
	40113		EFFICIENT LIGHTING	269.9	2194.0	7.30	1.57	16009
	40117		EFFICIENT LIGHTING	269.9	2194.0	7.30	1.57	16009
	40120		EFFICIENT LIGHTING	269.9	2194.0	7.30	1.57	16009
	30101		KITCHEN HEAT RECOVERY	116.0	941.0	8.25	1.41	7760
	311		INSULATE STEAM LINES	3.0	12.0	14.58	1.34	175

ECO SUMMARY OF RECOMMENDED PROJECTS
ORGANIZED BY DESCENDING SAVINGS TO INVESTMENT RATIO

B(NUMBER	PROJECT	DESCRIPTION	ENERGY SAVINGS MBTU/YR	DOLLAR SAVINGS PER YR	PAYBACK YEARS	SIR	CONTRACT COST DOLLARS	
	4701		INSULATE STEAM LINES	3.0	12.0		1.34	175	
	50101		KITCHEN HEAT RECOVERY	84.0	701.0		1.31	6221	
	30101		STORM WINDOWS	77.6	893.0		1.30	13433	
	40110		BALANCE HVAC SYSTEM	100.2	583.0		1.29	1883	
	113		KITCHEN HEAT RECOVERY	81.0	462.0		1.27	2067	
*	BAV		FLUOR LIGHTING LOAD RED.	15161.3	50769.0		1.26	347582	
*	BAV		ROOF SPRAY COOLING	118.0	677.0		1.26	9039	
	9227		AIR CURTAINS	26.0	109.8		1.20	1515	
	2908		WEATHER STRIPPING	5.2	22.0		1.09	91	
	30301		EFFICIENT LIGHTING	641.3	2359.0	10.26	1.08	24211	
	5202		FIX LEAKING CW PUMP	1.6	6.2		1.08	23	
	5205		FIX LEAKING CW PUMP	1.6	6.2		1.08	23	
	5206		FIX LEAKING CW PUMP	1.6	6.2		1.08	23	
	5202		WEATHER STRIPPING	6.4	21.0		1.04	91	
	5205	00.9	WEATHER STRIPPING	6.4	21.0		1.04	91	

There are no energy savings associated with project BV-5.00. Savings are in gallons of water. NOTE:

This project is originally from the Black and Veatch Basewide Energy Plan. The costs were escalated to today's dollars and then a new life cycle cost analysis was performed in accordance with the scope **

Overlap of energy savings occurs between ECO 22 and 23 for building 106. For this reason, the ECO with the highest SIR is recommended. ***

													EVELS	EVELS							TR ED												NG									
REMARKS		MINIMUM GLASS	RECOMMENDED	NOT PRACTICABLE	MINIMUM GLASS	MINIMUM GLASS	NONE NECESSARY	NOT RECOMMENDED	MINIMUM GLASS	NOT CONSIDERED	NOT RECOMMENDED	ALREADY IN USE	NOT REQUIRED-LOW LIGHT LEVELS	NOT REQUIRED-LOW LIGHT LEVELS			SEE PROJECT 21	NOT RECOMMENDED	RECOMMENDED	NOT DECOMPENDED	NOT RECUMENDED	NOT DECOMMENDED	NOT APPROPRIATE	NOT RECOMMENDED	NOT RECOMMENDED	NOT RECOMMENDED	NO UPGRADE RECOMMENDED	NOT RECOMMENDED	RECOMMENDED	RECOMMENDED	DECOMMENDED	NOT RECOMMENDED	NO DISHWASHER IN BUILDING		NOT RECOMMENDED			NOT RECOMMENDED	NOT RECOMMENDED	NOT RECOMMENDED	NOT RECURRED	
E	DOLLARS	c	230	0	0	0	0	182	0	0	1637	C	0	0	ļ	27	0 8	82	200	333	-	0003	7886	1515	1495	986	0	0	30	457	230	5452	1670	7345	19223			17244	3764	18471	184/1	,
SIR		0.00	4.28	0.00	0.00	00.0	00.0	0.52	00.0	00.0	0.53	0.0	00.0	0.00		12.93	00.0	0.12	8.02	5.29	0.0	00.0	91.0	0.15	0.44	0.30	0.00	0.00	3.12	19.32	00.0	110	0.03	0.50	0.19			0.85	0.63	0.00	0.00	
PAYBACK YEARS		0.00	3.83	0.00	00.0	0.00	0.00	0.00	0.00	0.00	00.0	00.0	0.00	00.0			0.00	0.00	1.22	1.27	0.0	00.0	00.0	00.0	0.00	0.00	00.0	0.00	0.32	09.0	00.0	10.7	00.0	00.0	00.0			0.00	0.00	00.0	00.0	,
e s	PER YR	c	0.09	0.0	0.0	0.0	0.0	21.0	0.0	0.0	61.0	0	0.0	0.0		38.2	0.0	1.1	41.1	263.0	0.0	0.0	0.80	2.0	78.0	71.0	0.0	0.0	95.0	767.0	330.0	71.0	0.0	279.0	279.0			1309.0	144.0	0.0	0.0//)
-	MBTU/YR	0	14.2	0.0	0.0	0.0	0.0	6.4	0.0	0.0	15.1			0.0		10.0	0.0	0.3	24.0	0.69	0.0	0.0	24.3	0.0	20.5	17.8	0.0	0.0	31.8	190.0	80.3	32.4	1.0	61.2	61.2			342.5	34.2	0.0	222.1)
DESCRIPTION		ADDA OT AGG ABGA	VECTIVITY PEAST	VESTIBILE-SOUTH	SOLAR FILMS	INSULATED PANELS	CAULKING	WEATHER STRIPPING	DOUBLE GLAZING	STORM WINDOWS	INSULATION	Culmuott mustordas	DEDI THEAND WITHOUT THE	REDUCE LIGHTING LEVELS		WATER HEATER INSULATION		TER	LOWER DOM HW TEMP	HW BOOSTERS	CHANGE TO VAV SYSTEM	RANGE HOOD SHUTOFF		FUSILIVE KILCHEN FRESSURE	ECONOMIZER CYCLE	BALANCE HVAC	UPGRADE HVAC CONTROLS	DINING ROOM OPERATIONS	HVAC OPERATIONS	NIGHT SETBACK	INFRARED HEATERS	FIRE INSULATION	KILCHEN HEAI KECOVENI	VITCH EXH HEAT RECOVERS				REDUCE GLASS AREA	VESTIBULES	SOLAR FILMS	INSULATED PANELS	CAULATING
PROJECT	9	* 4	1.00	2.10	3.00	4.00	5.00	6.00	7.00	8.00	9.00	00	12.00	14.00	*	19.00	20.00	21.00	22.00	23.00	27.00	28.00	29.00	30.00	35.00	36.00	38.00	39.00	40.00	44.00	46.00	49.00	52.00	56.10	55.20		RAL *	1.00	2.00	3.00	4.00	2000
REFERENCE PAGE	BUILDING 106	ARCHITECTURAL	NA 1	1-901	NA NA	NA	NA	6-901	NA	NA	106-14	ELECTRICAL	NA NA		ANICAL	106-17	NA	106-21	106-26	106-30			89		106-45			NA	106-55	106-58	106-61	106-65	106-68	106 73	106-77	ONLY TING	ARCHITECTURAL	113-1	GEN-1	113-4	113-7	NA

^{*} REFER TO VOLUME II FOR SUPPORT CALCULATIONS NA - NOT APPLICABLE ** REFER TO VOLUME III FOR SUPPORT CALCULATIONS MH - MANHOUR

	ENT		T IN USE	D KY	
REMARKS	NOT REQUIRED NOT RECOMMENDED NOT RECOMMENDED INSULATION IS SUFFICIENT	NO CHANGES REQUIRED FLUORESCENTS IN USE LICHT LEVELS OK NOT NECESSARY SEE PROJECT 21 NOT RECOMMENDED NOT RECOMMENDED	NOT REQUIRED-140 F ALREADY IN USE RECOMMENDED HOCDS ARE OFF WHEN NOT IN USE ALREADY IN USE AIR BALANCE W/KITCHEN IS OK	RECOMMENDED RECOMMENDED BALANCE IS SATISFACTORY NOT REQUIRED NO CHANGES RECOMMENDED RECOMMENDED RECOMMENDED CEILING TO LOW ALL PIPE INSULATED RECOMMENDED SEE PROJECT 52 NOT RECOMMENDED	REMOVED FROM STUDY REMOVED FROM STUDY NO CONDENSATE LEAKS RECOMMENDED RECOMMENDED RECOMMENDED RECOMMENDED RECOMMENDED RECOMMENDED RECOMMENDED
CONTRACT COST DOLLARS	0 35 <i>577</i> 28104 0	0 0 0 0 219 219	19639 0 0 0 0 0	1515 1955 0 0 0 3652 0 5067 5067 41473	0 0 0 228 175 228 385 420
SIR	0.00 0.24 0.81 0.00	0.00 0.00 0.00 0.00 0.00 0.02	0.00 0.00 0.00 0.00	26.36 0.00 0.00 0.00 0.00 42.71 3.41 3.41 0.00 0.00 0.00 0.53	0.00 0.00 0.00 8.61 1.34 8.61 5.72 6.55
PAYBACK YEARS	0.00	0.00	0.00 0.00 0.00 0.00 0.00	8.13 0.32 0.00 0.00 0.02 3.47 0.00 0.00 0.00	0.00 0.00 0.00 2.21 14.58 2.21 3.32 2.94
DOLLAR F SAVINGS Y PER YR	0.0 398.0 1639.0 0.0	0.00	0.0 0.0 7661.0 0.0	186.4 6061.0 0.0 0.0 1271.0 1051.0 0.0 462.0 2325.0	0.0 0.0 0.0 103.0 12.0 116.0 143.0
ENERGY SAVINGS MBTU/YR	0.0 84.6 408.0 0.0	0.0000000000000000000000000000000000000	2010.7	43.0 0.0 0.0 341.4 296.0 0.0 0.0 81.0 538.7	0.0 0.0 21.0 3.0 24.0 3.0
DESCRIPTION	NUED) WEATHER STRIPPING WEATHER GLAZING STORM WINDOWS INSULATION	EFFICIENT LIGHTING REPLACE INCAN W/FLUORESCENT REDUCE LIGHTING LEVELS WATER HEATER INSULATION WATER HEATER SHUTOFF-RESTROMS WATER HEATER SHUTOFF-RESTROMS TOWED NOW HEATER SHUTOFF-RICHEN	LOWER DOM HW TEMP-KITCHEN LOWER DOM HW TEMP-KITCHEN HOT WATER BOOSTERS CHANGE TO VAV SYSTEM KITCHEN MAKEUP AIR POSITIVE KITCHEN PRESSURE	AIR CURTAINS ECONOMIZER CYCLE BALANCE HVAC UPGRADE HVAC CONTROLS DINING ROOM OPERATIONS HVAC OPERATIONS NIGHT SETBACK INFRARED HEATERS PIPE INSULATION KITCHEN HEAT RECOVERY DISHWASHER HEAT RECOVERY KITCH EXH HEAT RECOVERY	REVISE BOILER CONTROLS BOILER OXYGEN TRIM CONTROL RETURN CONDENSATE INSULATE STEAM LINES INSULATE GTEAM LINES
PROJECT	6.00 7.00 8.00 9.00	12.00 14.00 * 19.00 20.00 21.10	22.20 23.00 27.00 28.00 29.00	31.00 35.00 36.00 38.00 39.00 44.00 44.00 44.00 52.00 55.10	11 57.00 58.00 59.00 60.01 60.02 60.03
REFERENCE PAGE	BUILDING 113 (CONTINUED) NA 6.00 WEAT 113-10 7.00 DOUB 113-13 8.00 STOR NA 9.00 INSU	ELECTRICAL NA NA NA MECHANICAL NA 113-16 113-21		53	BUILDING 311 MECHANICAL ** NA 5 NA 5 NA 5 311-1 6 311-13 6 311-13 6 311-13 6 311-25 6

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REMARKS	REMOVED FROM STUDY REMOVED FROM STUDY NO CONDENSATE LEAKS PROPERLY INSULATED	NOT RECOMMENDED NOT RECOMMENDED EXISTING GLASS IS TINTED NOT RECOMMENDED NOT REQUIRED AT THIS TIME RECOMMENDED ALREADY IN USE	INSULATION IS SUFFICIENT NO CHANCES RECOMMENDED ONLY USED FOR MOOD LIGHTING LIGHT LEVELS OK	HEATER HAS 1-1/2 IN. BLANKET SEE PROJECT 21 NOT RECOMMENDED ALREADY IN USE RECOMMENDED ALREADY IN USE RECOMMENDED ALREADY IN USE HOCDS ARE OFF WHEN NOT IN USE HOCDS ARE OFF WHEN NOT IN USE ARE BALANCE W/KITCHEN IS OK RECOMMENDED RECOMMENDED RECOMMENDED NO CHANGES REQUIRED NOT REQUIRED NOT REQUIRED NOT REQUIRED NOT RECOMMENDED
CONTRACT COST DOLLARS	0000	9304 3764 0 9966 0 91	0 0 0	219 219 50 50 12274 0 0 2967 6346 0 0 0 0 0 29931 58999 41473
SIR	0.00	0.00 0.00 0.00 0.00 1.09	0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0
PAYBACK YEARS	0.00	0.00 0.00 0.00 0.00 0.00 0.00	00.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0
DOLLAR ESAVINGS Y	0.0	-264.0 144.0 0.0 -287.0 0.0 22.0 0.0	0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
ENERGY SAVINGS MBTU/YR	0.0	-75.0 34.2 0.0 -80.9 0.0 5.2	0.0	0.0 0.0 0.0 0.0 16.0 0.0 0.0 765.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0
DESCRIPTION	REVISE BOILER CONTROLS BOILER OXYGEN TRIM CONTROL RETURN CONDENSATE INSULATE STEAM LINES	REDUCE GLASS AREA VESTIBULES SOLAR FILMS INSULATED PANELS CAULKING WEATHER STRIPPING	STORM WINDOWS INSULATION EFFICIENT LIGHTING REPLACE INCAN W/FLUORESCENT REDUCE LIGHT LEVELS	REDUCE LIGHT LEVELS WATER HEATER INSULATION WATER HEATER TEMP CONT WATER HEATER SHUTOFF LOWER DOM HW TEMP-KITCHEN HOT WATER BOOSTERS CHANGE TO VAV SYSTEM RANGE HOOD SHUTOFF KITCHEN MAKEUP AIR POSITIVE KITCHEN PRESSURE AIR CURTAINS ECONOMIZER CYCLE BALANCE HVAC UPGRADE HVAC CONTROLS DINING ROOM OPERATIONS HVAC OPERATIONS NIGHT SETBACK CONTROL INFRARED HEATERS PIPE INSULATION KITCHEN HEAT RECOVERY DISHWASHER HEAT RECOVERY DISHWASHER HEAT RECOVERY EXTICH EXH HEAT RECOVERY
PROJECT	57.00 58.00 59.00 60.00	AL * 1.00 2.00 3.00 4.00 5.00 7.00	8.00 9.00 12.00 13.00	** 119.00 119.00 220.00 221.00 221.00 23.00 240.00 335.00 346.00 44.00 44.00 552.00
REFERENCE PAGE	BUILDING 1102 MECHANICAL NA 57 NA 58 NA 59 NA 60	BUILDING 2908 ARCHITECTURAL 2908-1 1. GEN-1 2. 2908-4 3. 2908-7 4. NA 5.	-15 [RICAL	HECHANICAL NA NA NA 1 2908-13 2 908-23 NA 2 908-27 NA NA NA NA NA NA NA NA NA N

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REFERENCE PR PAGE NU	PROJECT NUMBER	DESCRIPTION	ENERGY SAVINGS MBTU/YR	DOLLAR SAVINGS PER YR	PAYBACK YEARS	SIR	CONTRACT COST DOLLARS,	REMARKS
BUILDING 4510 ELECTRICAL NA MECHANICAL NA 38.00	00 00	TRANSFORMER OVERVOLTAGE UPGRADE HVAC CONTROLS	0.0	0.0	0.00	0.00	0 0	NO OVERVOLTAGE EXISTS NEW HVAC TO BE INSTALLED
BUILDING 4511 ARCHITECTURAL * 4511-1 6.00 ELECTRICAL NA 16.00 MECHANICAL NA 38.00	1. 6.00 6.00 8.00	WEATHER STRIPPING TRANSFORMER OVERVOLTAGE UPGRADE HVAC CONTROLS	14.2	0.0	0.00	1.83	149	RECOMMENDED NO OVERVOLIAGE EXISTS RECENTLY REPLACED
BUILDING 4605 MECHANICAL * 4605-1 47.00	00	SOLAR HEATING	4048.0	18416.0	00.0	0.43	618980	POOL-NOT RECOMMENDED
BUILDING 4701 MECHANICAL ** NA 57.00 NA 58.00 4701-1 59.01 4701-5 59.02 4701-9 60.01 4701-15 60.02 4701-15 60.03	01. * 57.00 59.00 59.01 60.02 60.03	REVISE BOILER CONTROLS BOILER OXYGEN TRIM CONTROL RETURN CONDENSATE INSULATE STEAM LINES	0.0 0.0 7.0 7.0 7.0 31.0 36.3 3.0	0.0 0.0 35.0 35.0 151.0 126.0	0.00 0.00 0.63 0.63 2.69 14.58	0.00 0.00 29.83 29.83 7.16 59.25 1.34 8.62	0 0 22 22 406 46 175 204	REMOVED FROM STUDY REMOVED FROM STUDY RECOMMENDED RECOMMENDED RECOMMENDED RECOMMENDED RECOMMENDED
BUILDING 4901 MECHANICAL * 4901-1 56.	% * 56.00	HYDRAULIC SYSTEM HEAT RECOVERY	2894.0	13552.0	7.30	1.93	98995	RECOMMENDED
BUILDING 5102 ARCHITECTURAL NA PORTHER PROPERTY PARTY	02. AL. 9.00	INSULATION ECONOMIZER CYCLE	0.0	0.0	0.00	00.0	0 0	INSULATION MEETS DOD ALREADY IN USE
BULLDING 5202 ARCHITECTURAL * 5202-1 6.01 MECHANICAL * 5202-6 34.01	6.00 4.00 34.00 50.00	WEATHER STRIPPING SEAL AIR HANDLING UNIT LEAKS FIX LEAKING CW PUMP	4.9	21.0	4.33 0.41 3.69	1.04	91 72 23	R EC OMMENDED R EC OMMENDED R EC OMMENDED

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REMARKS	RECOMMENDED	RECOMMENDED	NOT NECESSARY RECOMMENDED	RECOMMENDED RECOMMENDED		REMOVED FROM STUDY		RECOMMENDED	RECOMMENDED		ABANDONED	ABANDONED	ABANDONED		NOT RECOMMENDED	NOT RECOMMENDED			RECOMMENDED	WEATHER STRIPPING IS OK	NOT RECOMMENDED	NOT RECOMMENDED	NOT RECOMMENDED		REFER TO PROJECT 13	NOT REQUIRED-LOW LIGHT LEVELS	
CONTRACT COST DOLLARS	35	91	23	72 23	C	o c	24	22	141		0	0	0		17.13	3764	311	1630	99	0	3140	2469	1168	,	o c	00	
SIR	71.6	1.04	0.00	29.53 1.08	0	00.00	277.00	29.83	38.42 8.16		0.00	00.0	0.00		0 13	0.63	0.15	0.12	34.48	0.00	0.11	0.21	0.18		00.0	00.0	
PAYBACK YEARS	1.25	4.33	3.69	0.41	6	00.00		0.63	2.35		0.00	0.00	00.0		0	0.00	00.0	0.00	0.51	0.00	0.00	0.00	0.00		0.00	0.00	
DOLLAR SAVINGS PER YR	28.0	21.0	0.0	175.0	ć	0.0	349.0	35.0	0.09		0.0	0.0	0.0		130	144.0	11.0	14.0	125.0	0.0	18.0	26.0	14.0		0.0	0.0	
ENERGY SAVINGS MBTU/YR	0.9	4.9	0.0	41.0	c c	0.0	73.0	7.0	13.0		0.0	0.0	0.0		c	34.2	2.8	3.4	28.8	0.0	4.0	5.9	3.3	4	0.0	0.0	
DESCRIPTION	SEAL AIR HANDLING UNIT LEAKS	WEATHER STRIPPING	SEAL AIR HANDLING UNIT LEAKS FIX LEAKING CW PUMP	SEAL AIR HANDLING UNIT LEAKS FIX LEAKING CW PUMP		REVISE BOILER CONTROLS ROILER OXYGEN TRIM CONTROLS			RETURN CONDENSATE INSULATE STEAM LINE		REVISE BOILER CONTROLS		RETURN CONDENSATE		PEDICE CIASS APEA	II.FS	SOLAR FILMS	INSULATED PANELS	CAULKING	WEATHER STRIPPING	DOUBLE GLAZING	STORM WINDOWS	INSULATION		BEFICIENT LIGHTING	REDUCE LIGHTING LEVELS	
PROJECT NUMBER	203 * 34.00	05 AL * 6.00	34.00 50.00	206 * 34.00 50.00	21 *	58.00	59.01	59.02	59.03	95	57.00	58.00	29.00	24	* TE	200.7	3.00	4.00	5.00	00.9	7.00	8.00	00.6		12.00	13.00	
REFERENCE PAGE	BUILDING 5203 MECHANICAL * 5203-1 34		MECHANICAL NA 5205-6	BUILDING 5206 MECHANICAL * 5206-1 34 5206-5 50	DING 60	A N	7	6021-5	6021-13	BUILDING 8795 MECHANICAL	NA		NA	BUILDING 9224	ARCHITECTURAL	CEN-1	9224-4	9224-7	9224-10	NA	9224-15	9224-18	9224-21	ELECTRICAL	NA NA	NA	

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ECO SUMMARY

NUMBER N	PRODECT DESCRIPTION PRINCE PAYING STAME STAM									
MICHAEL 1.00 WATER HEATER TREPLICATION 0.0 0	Match Matc	REFERENCE PAGE	PROJECT		ENERGY SAVINGS	DOLLAR	PAYBACK YEARS	SIR	CONTRACT	REMARKS
HEATER INSULATION 0.0 0.00 0.00 0 0 0 0 0 0 0 0 0 0 0 0	HEATER INSULATION 0.0 0.0 0.0				MBTU/YR	PER YR			DOLLARS	
19.00 WATER HEATER INSULATION 0.0 0.00 0.	19.00 WATER HEATER INSULATION 0.00 0.00 0.00 0.00 NOT REQUIRED—AND BY IN INVEST HEATER INSULATION 0.00 0.00 0.00 0.00 0.00 NOT REQUIRED—AND BY IN INVEST HEATER SHUTCHE 0.00 0.00 0.00 0.00 0.00 0.00 NOT REQUIRED—AND BY IN INVEST HEATER SHUTCHE 0.00 0.00 0.00 0.00 0.00 0.00 NOT REQUIRED—AND BY INVEST HEATER SHUTCHE 0.00 0.00 0.00 0.00 0.00 0.00 NOT REQUIRED—AND BY INVEST HEATER SHUTCHE 0.00 0.00 0.00 0.00 0.00 0.00 NOT REQUIRED—AND BY INVEST HEATER SHUTCHE 0.00 0.00 0.00 0.00 0.00 0.00 NOT REQUIRED—AND BY INVEST HEATER 0.00 0.00 0.00 0.00 0.00 0.00 NOT REQUIRED—AND BY INVEST HEATER 0.00 0.00 0.00 0.00 0.00 0.00 NOT REQUIRED—AND BY INVEST HEATER 0.00 0.00 0.00 0.00 0.00 0.00 NOT REQUIRED—AND BY INVEST HEATER 0.00 0.00 0.00 0.00 0.00 0.00 NOT REQUIRED—AND BY INVEST HEATER 0.00 0.00 0.00 0.00 0.00 0.00 NOT REQUIRED—AND BY INVEST HEATER 0.00	ULLDING 9	224 (CONT	INUED)						
19.00 WATER HALTER TREP CAVING 0.0 0.0 0.00 0.	15.00 AATER HEATER TERPE CONTENT 0.00	ECHANICAL	_,		•	•	0	0	c	WH ON-CHATHORD
2.0.00 WATER HALTER SHOUNCE 0.0 0.00 0.00 0.00 NOT REGISTED NOT RECORDING NOT NOT REGISTED NOT	2.0.00 WATER HALFER SHOWER 10.0 0.0 0.00 0.00 0.00 NOT REQUIRED 40 NH IN TRY HALFER SHOWER 2.0 0.0 0.00 0.00 0.00 0.00 NOT REQUIRED 40 NH IN TRY HALFER SHOWER 2.0 0.0 0.00 0.00 0.00 0.00 NOT REQUIRED 40 NH IN TRY HALFER SHOWER 2.0 0.0 0.00 0.00 0.00 0.00 NOT REQUIRED 40 NH IN TRY HALFER SHOWER 2.0 0.0 0.00 0.00 0.00 0.00 NOT REQUIRED 40 NH IN TRY HALFER NOT RECOMBINED 2.0 0.0 0.00 0.00 0.00 NOT REQUIRED 40 NH IN TRY HALFER NOT RECOMBINED 2.0 0.00 0.00 0.00 NOT REQUIRED 4.0 NH IN TRY HALFER NOT RECOMBINED 2.0 0.00 0.00 0.00 NOT REQUIRED 4.0 NH IN TRY HALFER NOT HALFE	NA	19.00		0.0	0.0	00.0	00.0	0 0	DECUIPED-NO HU
22.00 LOWER DANKER SINTONER 22.00 CHARGE ROOF SINTONER 23.00 CHARGE ROOF SI	2.100 LOWER DAYERS SINUTOFF 0.00 0.0	NA	20.00	WATER HEATER TEMP CONTROL	0.0	0.0	00.0	0.00	0 0	ALCON TARES NO USE THE
23.00 HOT WATER BOOKTERS 22.00 INTEREDING THE PREMATURE 23.00 RATERER DOUGSTERS 23.00 RATERER RATER RECOVERY 23.00 RATERER RATER RECOVERY 24.00 RATERER RATER RECOVERY 24.00 RATERER RATER RECOVERY 25.00 RATER RATER RATER RECOVERY 25.00 RATER RAT	23.00 HOT WATER BOOSTERS 0.0 0.0 0.0 0.0 HOT WATER BOOSTERS 0.0 0.0 0.0 0.0 HOT WATER BOOSTERS 0.0 0.0 0.0 0.0 0.0 HOT WATER BOOSTERS 0.0 0.0 0.0 0.0 0.0 HOT WATER BOOSTERS 0.0 0.0 0.0 0.0 0.0 0.0 HOT WATER BOOSTERS 0.0 0.0 0.0 0.0 0.0 0.0 HOT REQUIRED 0.0 0.0 0.0 0.0 HOT REQUIRED 0.0 0.0 0.0 0.0 0.0 HOT REQUIRED 0.0 0.0 0.0 0.0 0.0 HOT REQUIRED 0.0 0.0 0.0 0.0 0.0 HOT REQUIRED 0.0 HOT REQUIRED 0.0 0.0 0.0 0.0 0.0 HOT REQUIRED 0.0 HOT REQUIRED 0.0 0.0 0.0 0.0 0.0 HOT REQUIRED 0.0 HOT REQUIRED 0.0 0.0 0.0 0.0 0.0 HOT REQUIRED 0.0 HOT REQUIRED 0.0 0.0 0.0 0.0 0.0 HOT REQUIRED 0.0 HOT REQUIRED 0.0 0.0 0.0 0.0 0.0 HOT REQUIRED 0.0 HOT REQUIRED 0.0 0.0 0.0 0.0 0.0 HOT REQUIRED 0.0 HOT REQUIRED 0.0 0.0 0.0 0.0 0.0 HOT REQUIRED 0.0 HOT REQUIRED 0.0 0.0 0.0 0.0 0.0 HOT REQUIRED 0.0 HOT REQUIRED 0.0 0.0 0.0 0.0 0.0 HOT REQUIRED 0.0 HOT REQUIRED 0.0 0.0 0.0 0.0 0.0 HOT REQUIRED 0.0 HOT RECOMERINED 0.0 0.0 0.0 0.0 HOT APPLICABLE 0.0 0.0 0.0 0.0 0.0 0.0 0.0 HOT APPLICABLE 0.0 HOT APPLICABLE 0.0 HOT APPLICABLE 0.0 HOT APPLICABLE 0.0 0.0 0.0 0.0 0.0 0.0 0.0 HOT HOT APPLICABLE 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 HOT HOT APPLICABLE 0.0 HOT APPLICABLE	NA	21.00	WATER HEATER SHUTOFF	0.0	0.0	0.00	00.0	0	Z :
23.00 CHANCE TO VAN SYSTEM 29.00 POSITIVE KITCHEN WAKEDPAREN 29.00 POSITIVE WAKEDPAREN 29.00 POSITIVE KITCHEN WAKEDPAREN 29.00 POSITIVE WAKEDPAREN 29.00 POSITI	23.00 CHANGE TO VAY SYSTEMS 0.0	NA	22.00		0.0	0.0	00.0	00.0	0	Z
25.00 CHARGE TO NAY SYSTEM 3.1 12.0 0.00 0.04 24.5 NOT REQUIRED 29.00 KITCHEN HAKEUP AIR 0.0 0.00	29.00 RAMKER HOLDS 3.1 1.0 0.0 0.04 2455 NOT REQUIRED 29.00 KITCHEN MAKEUP AIR 0.0 0.0 0.00 <	NA	23.00		0.0	0.0	00.0	0.00	0	NOT
10	28.00 RAMCE HOOM SINUTCRE 0.0 0.00	204-24	27.00		3.1	12.0	0.00	0.04	2455	NOT RECOMMENDED
29.00 FILTERIA MAKEUP AIR 29.00 POLITICAL STATING MAKEUP AIR 31.00 POSITIVE KITCHEN PRESSURE 31.00 OCO 0.00 0.00 0.00 0.00 0.00 0.00 0.	29.00 CITCHEN HAKEIP AIR 29.00 COLOR	17 17 VA	00.00	PANCE HOOD SHIPTOFF	0.0	0.0	00.0	00.0	0	
25.00 POSITIVE KITCHEN PRESSURE 0.0 0.0 0.00 0	2.500 CONTRIBED RESIDER 0.0	414	00.00	VITTUREN MAVEILE AID		0.0	00.0	0.00	C	NOT REQUIRED
30.00 POSITIVE KILTERIN PRESSURE 0.00	10.00 ALE CHEVALINE NITRE	NA	29.00	ALICHEN MAREUF AIR	0.0		00.0	00.0		NOT DECITED
31.00 ATR CURTAINS 0.0 0.00	31.00 ATR COURTINED 0.00	NA	30.00	POSITIVE KITCHEN PRESSURE	0.0	0.0	00.0	00.0	o (NOT KEUDINED
35.00 BALAMEE HYAC SYSTEMS 36.00 UPCRADE HYAC CONTROLS 40.00 UPCRADE HYA	35.00 SCOMMENDER CYCLE 1.9 7.0 0.0	NA	31.00	AIR CURTAINS	0.0	0.0	0.00	00.0	õ	
36.00 PALAMCE HYAC SYSTEMS 0.0 0.00	36.00 PALAMCE HYAC CONTROLS 0.00 0.00 0.00 0.00 NOT REQUIRED 39.00 DININE ROUNEDS 30.00 0.00	224-27	35.00		1.9	7.0	0.00	0.02	2 90 5	NOT RECOMMENDED
38.00 UPGRADE HVAC CONTRGIS 0.0 0.00	38.00 DURING ROMY OPERATIONS 0.0 0.00 0.00 0.00 NOT REQUIRED 40.00 NINING REQUIRED 0.00 0.00 0.00 0.00 0.00 0.00 44.00 NIGHT SETACK CONTROL 0.0 0.00 0.00 0.00 0.00 0.00 44.00 NIGHT SETACK CONTROL 0.0 0.00 0.00 0.00 0.00 0.00 44.00 NIGHT SETACK CONTROL 0.0 0.00 0.00 0.00 0.00 0.00 44.00 NIGHT SETACK CONTROL 0.0 0.00 0.00 0.00 0.00 0.00 44.00 NIGHT SETACK CONTROL 0.0 0.00 0.00 0.00 0.00 0.00 45.00 DISHMASHIR HAAT RECOVERY 0.0 0.00 0.00 0.00 0.00 0.00 45.00 DISHMASHIR HAAT RECOVERY 0.0 0.00 0.00 0.00 0.00 0.00 4.00 DISHMASHIR FAILES AREA 0.0 0.00 0.00 0.00 0.00 0.00 4.00 NOT APPLICABLE 0.0 0.00 0.00 0.00 0.00 0.00 4.00 NOT APPLICABLE 0.0 0.00 0.00 0.00 0.00 0.00 4.00 NOT APPLICABLE 0.0 0.00 0.00 0.00 0.00 0.00 4.00 NOT APPLICABLE 0.0 0.00 0.00 0.00 0.00 0.00 4.00 NOT APPLICABLE 0.0 0.00 0.00 0.00 0.00 4.00 NOT APPLICABLE 0.00 0.00 0.00 0.00 0.00 4.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 4.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 4.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 4.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 4.00	NA	36.00	BALANCE HVAC SYSTEMS	0.0	0.0	00.0	0.00	0	
19.00 DINING ROOM OPERATIONS 0.0 0.00 0.00 0.00 O.00 O.0	10 10 10 10 10 10 10 10	NA	38.00	UPGRADE HVAC CONTROLS	0.0	0.0	0.00	00.0	0	
HACO HACO OPERATIONS 0.0	HACO HACO OPERATIONS 0.0 0.0 0.00	AM	39.00	DINING ROOM OPERATIONS	0.0	0.0	00.0	0.00	0	NOT REQUIRED
		N.A.	00 07	HVAC OPERATIONS	0.0	0.0	00-0	00.0	0	WHEN NOT IN
4.00 INFERRED HANTERS 4.00 INFERRED	44.00 NIERARED HEATERS 8.5 38.0 0.00 0.18 2794 NOT RECOMMENDED 45.00 DISHWASHER HEAT RECOVERY 0.0 0.0 0.00 0.00 55.00 KITCHEN EXH HEAT RECOVERY 0.0 0.0 0.00 0.00 62.222 CALLS AREA 0.0 0.0 0.00 0.00 0.00 63.00 VESTIBULES 0.0 0.00 0.00 0.00 0.00 64.00 NIERARED HEAT RECOVERY 0.0 0.0 0.00 0.00 0.00 65.00 VESTIBULES 0.0 0.0 0.00 0.00 0.00 0.00 65.00 VINDAMENDED CRACK 0.00 0.00 0.00 0.00 0.00 65.00 NOT APPLICABLE 0.00 0.00 0.00 0.00 0.00 65.00 NOT RECOMBENDED 0.00 0.00 0.00 0.00 0.00 65.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 65.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 70.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 70.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 70.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 70.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 70.00 0.	W.	00.01	NACHT CETTA ACT CONTROL			000	00.0		RECOMMENDED
15.00 PIPE INSULATION 0.00 0.	19.00 PIPE INSULATION 0.00 0.	NA	44.00	NIGHT SEIBACK CONINCE	9 0	0.00	00.0	00.0	7076	NOT BECOMMENDED
49.00 PISE INSULATION 55.00 KITCHEN EXH HEAT RECOVERY 55.00 KITCHEN EXH HEAT RECOVERY 60.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00	49.00 P.P.P. INSULATION P.P.P. INSULATION P.P.P. INSULATE RECOVERY D.00 D.	224-31	46.00	INFRARED HEATERS	0.0	38.0	0.00	0.10	4617	NOT NECOMMENDED
55.00 KITCHEN EXH HEAT RECOVERY 0.0 0.00 0.00 0.00 0 NO DISHABSHING KRQ 55.00 KITCHEN EXH HEAT RECOVERY 0.0 0.0 0.00 0.00 0 NO KITCHEN FUNCTION C.00 0.00 0.00 0.00 0.00 NO KITCHEN FUNCTION C.00 0.00 0.00 0.00 NO TAPELICABLE 0.00 0.00 0.00 0.00 NOT APPLICABLE 0.00 0.00 0.00 0.00 0.00 0.00 NOT APPLICABLE 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	55.00 DISHWASHER HEAT RECOVERY 0.0 0.00 0	NA	49.00	PIPE INSULATION	0.0	0.0	00.0	00.0	> (ALL FIFE INSULATED
15.00 KITCHEN EXH HEAT RECOVERY 0.00	55.00 KITCHEN EXH HEAT RECOVERY 0.0 0.0 0.0 0.00 0.00 NO KITCHEN FUNCTION ECTIVAL.* 1.00 REDUCE CLASS AREA 0.0 0.0 0.0 0.0 0.0 BLDC HAS ALMOST NC 2.00 VESTIBULES 3.00 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	NA	54.00	DISHWASHER HEAT RECOVERY	0.0	0.0	0.00	0.00	o	NO DISHMASHING REQUIRED
100 VESTIBULES 144.0 0.00 0	1.00 VESTIBULES SCAREA 0.00	NA	55.00	KITCHEN EXH HEAT RECOVERY	0.0	0.0	0.00	0.00	0	NO KITCHEN FUNCTIONS
NET CLASS AREA 0.0 0.0	NEDUCE CLASS AREA 0.0 0.00 0.	DITTIDING	7661							
1.00 REDUCE CIASS AREA 0.00 0	1.00 REDUCE CLASS AREA 0.0 0.00 0.	RCHITECT	IRAL *							
SOLAR FILMS 34.2 144.0 0.00 0.63 3764 NOT RECCMMENDED 3.00 SOLAR FILMS 0.00 0.	2.00 VESTIBULES 34.2 144.0 0.00 0.63 3764 NOT RECOMMENDED 2.00 SOLAR FILMS 0.0 0.00	NA	1.00	REDIICE GLASS AREA	0.0	0.0	00.0	0.00	0	BLDG HAS ALMOST NO GLASS
10 10 10 10 10 10 10 10	1.00 SOLAR FLIMS 0.00	EN-1	00.0	VECTIBILES	34.7	144.0	00.00	0.63	3764	NOT RECOMMENDED
CALL	CAULKING	NA NA	00.5	COLUMN TILKS			00.0	0.00	0	NOT APPLICABLE
Colored Heater Farichem Colored Heater F	CALL CALLEING CAUSTING CA	MA	00.	TNCIII ATED DANET C				0.00	c	NOT APPLICABLE
COURT CANTING CANTIN	Column C	NA CO	00.4		73.5	,		20.89	85	ACK
Color Weather Stricting Color	CAL WEATER SIRIETING 0.0 0.00	1-177	00.0	E	7.7	4		55.0	227	
10 DODDIE STATING 0.0	NOTE	9-177	00.0	MEALBER SINIFFING		0.12	00.0	000		NOT APPLICABLE
# 10 SIDKH WINDOWS 9.00 INSULATION 9.00 INSULATION 12.00 EFFICIENT LIGHTING 13.00 REPLACE INCAN W/FLUORESCENT 14.00 REPLACE INCAN W/FLUORESCENT 19.10 REDUCE LIGHT LEVELS 19.20 INSULATE WATER HEATER—KITCHEN 19.20 INSULATE WATER HEATER—FIN ROOM 2.0.00 0.00 0.00 8.2 3.28 4.50 27 RECOMMENDED 20.00 0.00 0.00 8.2 3.28 4.50 27 RECOMMENDED 21.10 WATER HEATER SHUTOFF—KITCHEN 21.20 WATER HEATER SHUTOFF—KITCHEN 22.10 LOWER KITCHEN HW TEMP 15.0 20.00 2.50 10.81 22.20 LOWER KITCHEN HW TEMP 11.0 0.4 0.00 0.00 23.3 RECOMMENDED 24.00 0.00 0.00 0.00 25.20 LOWER RITCHEN HW TEMP 25.20 LOWER FIN ROOM HW TEMP 26.00 0.00 0.00 0.00 27.00 0.00 0.00 28.00 0.00 29.00 0.00 20.00 0.	STOKEN WINDOWS STOKEN WINDOWS Co.	NA	00.7	DOUBLE GLAZING	0.0	0.0	00.0		0 0	NOT ADDITIONS
12.00 EFFICIENT LIGHTING 0.0 0.0 0.00 0	NEULATION 1.00 INSULATION 0.0 0.0 0.00	NA	8.00	STORM WINDOWS	0.0	0.0	00.0	00.0	> '	NOT AFFERDANCE
12.00 REPLACE INCAT W/FLUORESCENT 27.6 299.0 1.00 9.04 298 14.00 REDUCE LIGHT LEVELS 27.6 299.0 1.00 9.04 298 14.00 REDUCE LIGHT LEVELS 0.0 0.0 0.00 0.	12.00 REFICIENT LIGHTING 0.0 0.0 0.00 0	NA		INSULATION	0.0	0.0	00.0	00.0	0	INSULATION IS SUFFICIENT
12.00 EFFICIENT LIGHTING 13.00 REPLACE INAM W/FLUORESCENT 14.00 REDUCE LIGHT LEVELS 14.00 REDUCE LIGHT LEVELS 19.10 INSULATE WATER HEATER-KITCHEN 19.20 WATER HEATER FONTROL 21.10 WATER HEATER SHUTOFF-KITCHEN 21.20 WATER HEATER SHUTOFF-KITCHEN 22.10 LOWER RITCHEN HW TEMP 15.0 LOWER RITCHEN HW TEMP 15.0 LOWER PIN ROOM HW TEMP 15.0 LOWER P	12.00 EFFICIENT LIGHTING 13.00 REFLACE INCAN W/FLUORESCENT 14.00 REDUCE LIGHT LEVELS 14.00 REDUCE LIGHT LEVELS 19.10 INSULATE WATER HEATER-FIN ROOM 20.00 WATER HEATER FAITCHEN 21.10 WATER HEATER SHUTOFF-KITCHEN 21.20 WATER HEATER SHUTOFF-KITCHEN 22.10 WATER HEATER SHUTOFF-FIN RO 23.10 WATER HEATER SHUTOFF-FIN RO 24.10 WATER HEATER SHUTOFF-FIN RO 25.10 WATER SHUTOFF-FIN RO 25.10 WATER SHUTOFF-FIN RO 25.10 WATER	LECTRICAL								
13.00 REPLACE INCAN W/FLUORESCENT 27.6 299.0 1.00 9.04 298 14.00 REDUCE LIGHT LEVELS 0.0 0.0 0.00 0.00 0 ** 19.10 INSULATE WATER HEATER-KITCHEN 3.0 14.8 1.83 8.06 27 19.20 WATER HEATER PIN ROOM 2.0 8.2 3.28 4.50 27 21.10 WATER HEATER SHUTOPF-KITCHEN 0.1 0.4 0.00 0.03 219 21.20 WATER HEATER SHUTOPF-PIN RM 0.1 0.4 0.00 0.03 219 22.10 LOWER KITCHEN HW TEMP 15.0 20.0 2.50 10.81 50 22.20 LOWER PIN ROOM HW TEMP 15.0 2.30 2.40 3.50	13.00 REPLACE INCAN W/FLUORESCENT 27.6 299.0 1.00 9.04 298 14.00 REDUCE LIGHT LEVELS 0.0 0.0 0.00 0.00 0.00 14.00 REDUCE LIGHT LEVELS 0.0 0.0 0.00 0.00 0.00 19.10 INSULATE WATER HEATER-PIN ROOM 2.0 8.2 3.28 4.50 27 20.00 WATER HEATER FAITCHEN 0.1 0.4 0.00 0.00 0.03 21.10 WATER HEATER SHUTOFF-KITCHEN 0.1 0.4 0.00 0.03 219 21.20 WATER HEATER SHUTOFF-PIN RW 0.1 0.4 0.00 0.03 219 22.20 LOWER FIN ROOM HW TEMP 15.0 20.0 2.50 10.81 50 22.20 LOWER PIN ROOM HW TEMP 3.0 -36.2 0.00 -4.03 50 23.00 HOT WATER BOOSTERS 11.0 88.0 3.78 3.78 333	NA			0.0		00.0	0.00	0	REFER TO PROJECT 13
14.00 REDUCE LIGHT LEVELS 0.0 0.0 0.00 <td>14.00 REDUCE LIGHT LEVELS 0.0 0.0 0.00 0.00 0.00 0 19.10 INSULATE WATER HEATER-FIN ROM 3.0 14.8 1.83 8.06 27 19.20 UATER HEATER TEMP CONTROL 0.0 0.0 0.00 0.00 27 21.10 WATER HEATER SHUTOFF-KITCHEN 0.1 0.4 0.00 0.03 219 21.20 WATER HEATER SHUTOFF-KITCHEN 0.1 0.4 0.00 0.03 219 22.10 LOWER KITCHEN HW TEMP 15.0 20.0 2.50 10.81 50 22.20 LOWER PIN ROOM HW TEMP 3.0 -36.2 0.00 -4.03 50 23.00 HOT WATER BOOSTERS 11.0 88.0 3.78 3.78 333</td> <td>1227-11</td> <td>13.00</td> <td>REPLACE INCAN W/FLUORESCENT</td> <td>27.6</td> <td></td> <td></td> <td>9.04</td> <td>298</td> <td>RECOMMENDED</td>	14.00 REDUCE LIGHT LEVELS 0.0 0.0 0.00 0.00 0.00 0 19.10 INSULATE WATER HEATER-FIN ROM 3.0 14.8 1.83 8.06 27 19.20 UATER HEATER TEMP CONTROL 0.0 0.0 0.00 0.00 27 21.10 WATER HEATER SHUTOFF-KITCHEN 0.1 0.4 0.00 0.03 219 21.20 WATER HEATER SHUTOFF-KITCHEN 0.1 0.4 0.00 0.03 219 22.10 LOWER KITCHEN HW TEMP 15.0 20.0 2.50 10.81 50 22.20 LOWER PIN ROOM HW TEMP 3.0 -36.2 0.00 -4.03 50 23.00 HOT WATER BOOSTERS 11.0 88.0 3.78 3.78 333	1227-11	13.00	REPLACE INCAN W/FLUORESCENT	27.6			9.04	298	RECOMMENDED
19.10 INSULATE WATER HEATER-KITCHEN 3.0 14.8 1.83 8.06 27 19.20 INSULATE WATER HEATER-FIN ROOM 2.0 8.2 3.28 4.50 27 20.00 WATER HEATER TEMP CONTROL 0.0 0.0 0.00 0.00 0.00 21.10 WATER HEATER SHUTOFF-KITCHEN 0.1 0.4 0.00 0.03 219 21.20 WATER HEATER SHUTOFF-FIN RW 0.1 0.4 0.00 0.02 219 22.10 LOWER FIN ROOM HW TEMP 15.0 20.0 2.50 10.81 50 22.20 LOWER PIN ROOM HW TEMP 15.0 3.0 -4.03 50	* 19.10 INSULATE WATER HEATER-KITCHEN 3.0 14.8 1.83 8.06 27 19.20 INSULATE WATER HEATER-PIN ROOM 2.0 8.2 3.28 4.50 27 20.00 WATER HEATER TEMP CONTROL 0.0 0.0 0.00 0.00 0 21.10 WATER HEATER SHUTOFF-KITCHEN 0.1 0.4 0.00 0.03 219 22.10 LOWER KITCHEN HW TEMP 15.0 20.0 2.50 10.81 50 22.20 LOWER PIN ROOM HW TEMP 3.0 -36.2 0.00 -4.03 50 23.00 HOT WATER BOOSTERS 11.0 88.0 3.78 3.78 333	NA	14.00	REDUCE LIGHT LEVELS	0.0		0.00	0.00	0	REFER TO PROJECT 13
19.10 INSULATE WATER HEATER-KITCHEN 3.0 14.8 1.83 8.06 27 19.20 INSULATE WATER HEATER-PIN ROOM 2.0 8.2 3.28 4.50 27 20.00 WATER HEATER TEMP CONTROL 0.0 0.0 0.00 0.00 21.10 WATER HEATER SHUTOFF-KITCHEN 0.1 0.4 0.00 0.03 219 21.20 WATER HEATER SHUTOFF-PIN RM 0.1 0.4 0.00 0.02 22.10 LOWER FIN ROOM HW TEMP 15.0 20.0 2.50 10.81 50 22.20 LOWER PIN ROOM HW TEMP 3.0 -3.62 0.00 -4.03 50 22.20 LOWER PIN ROOM HW TEMP 1.0 0.6 0.0 -4.03 3.3 22.20 LOWER PIN ROOM HW TEMP 1.0 0.6 0.7 3.78 3.78 23.20 LOWER PIN ROOM HW TEMP 1.0 0.6 0.7 3.78 3.78 23.20 LOWER PIN ROOM HW TEMP 1.0 0.6 0.7 3.78 3.78 23.20 LOWER PIN ROOM HW TEMP 1.0 0.6 0.78 3.78 23.20 LOWER PIN ROOM HW TEMP 1.0 0.6 0.78 3.78 23.20 LOWER PIN ROOM HW TEMP 1.0 0.6 0.78 3.78 23.20 LOWER PIN ROOM HW TEMP 1.0 0.00 0.00 0.00 23.20 LOWER PIN ROOM HW TEMP 1.0 0.00 0.00 24.20 0.00 0.00 0.00 25.20 LOWER PIN ROOM HW TEMP 1.0 0.00 0.00 25.20 LOWER PIN ROOM HW TEMP 1.0 0.00 0.00 25.20 LOWER PIN ROOM HW TEMP 1.0 0.00 25.20 1.0 0.00 0.00 25.20 1.0 0.00 0.00 25.20 0.00 0.00 0.00 25.20 0.00 0.00 0.00 25.20 0.00 0.00 0.00 25.20 0.00 0.00 0.00 25.20 0.00 0.00 0.00 0.00 25.20 0.00 0.00 0.00 0.00 25.20 0.00 0.00 0.00 0.00 0.00 25.20 0.00 0.00 0.00 0.00 0.00 0.00 0.00 25.20 0.00 0.00 0.00 0.00 0.00 0.00	19.10 INSULATE WATER HEATER-KITCHEN 3.0 14.8 1.83 8.06 27 19.20 INSULATE WATER HEATER-PIN ROOM 2.0 8.2 3.28 4.50 27 20.00 WATER HEATER TEMP CONTROL 0.0 0.0 0.00 0.00 0 21.10 WATER HEATER SHUTOFF-KITCHEN 0.1 0.4 0.00 0.03 219 22.10 LOWER HEATER SHUTOFF-PIN RM 0.1 0.4 0.00 0.02 219 22.10 LOWER KITCHEN HW TEMP 3.0 -36.2 0.00 -4.03 50 22.20 LOWER PIN ROCM HW TEMP 3.0 -36.2 0.00 -4.03 50 23.00 HOT WATER BOOSTERS 11.0 88.0 3.78 3.78 333	ECHANICAL								
19.20 INSULATE WATER HEATER-PIN ROOM 2.0 8.2 3.28 4.50 27 20.00 WATER HEATER TEMP CONTROL 0.0 0.0 0.00 0.00 0.00 0 21.10 WATER HEATER SHUTOFF-KITCHEN 0.1 0.4 0.00 0.03 219 21.20 WATER HEATER SHUTOFF-PIN RM 0.1 0.4 0.00 0.02 219 22.10 LOWER RITCHEN HW TEMP 15.0 2.50 10.81 50 22.20 LOWER PIN ROOM HW TEMP 11.0 -36.2 0.00 -4.03 50 22.20 LOWER PIN ROOM HW TEMP 11.0 98.0 3.78 3.78 3.78	19.20 INSULATE WATER HEATER—PIN ROOM 2.0 8.2 3.28 4.50 27 20.00 WATER HEATER TEMP CONTROL 0.0 0.0 0.00 0.00 0 0 21.10 WATER HEATER SHUTOFF—RITCHEN 0.1 0.4 0.00 0.03 219 21.20 WATER HEATER SHUTOFF—PIN RM 0.1 0.4 0.00 0.02 219 22.10 LOWER RITCHEN HW TEMP 15.0 20.0 2.50 10.81 50 22.20 LOWER PIN ROOM HW TEMP 3.0 -36.2 0.00 -4.03 50 23.00 HOT WATER BOOSTERS 11.0 88.0 3.78 3.78 333	1227-15	. –	INSULATE WATER HEATER-KITCHEN	3.0			8.06	27	RECOMMENDED
20.00 WATER HEATER TEMP CONTROL 0.0 0.0 0.00 0.00 0.00 0 21.10 WATER HEATER SHUTOFF-KITCHEN 0.1 0.4 0.00 0.03 219 21.20 WATER HEATER SHUTOFF-PIN RM 0.1 0.4 0.00 0.02 219 22.10 LOWER KITCHEN HW TEMP 15.0 20.0 2.50 10.81 50 22.20 LOWER PIN ROOM HW TEMP 3.0 -36.2 0.00 -4.03 50 22.20 LOWER PIN ROOM HW TEMP 3.0 -36.2 0.00 -4.03 50	20.00 WATER HEATER TEMP CONTROL 0.0 0.0 0.00 0.00 0.00 0 21.10 WATER HEATER SHUTOFF-KITCHEN 0.1 0.4 0.00 0.03 219 21.20 WATER HEATER SHUTOFF-PIN RM 0.1 0.4 0.00 0.02 219 22.10 LOWER KITCHEN HW TEMP 15.0 20.0 2.50 10.81 50 22.20 LOWER PIN ROCM HW TEMP 3.0 -36.2 0.00 -4.03 50 23.00 HOT WATER BOOSTERS 11.0 88.0 3.78 3.78 333	977-19	19.20	INSULATE WATER HEATER-PIN ROOM	2.0		3.28	4.50	27	RECOMMENDED
21.10 WATER HEATER SHUTOFF-KITCHEN 0.1 0.4 0.00 0.03 219 21.20 WATER HEATER SHUTOFF-PIN RM 0.1 0.4 0.00 0.02 219 22.10 LOWER KITCHEN HW TEMP 15.0 20.0 2.50 10.81 50 22.20 LOWER FIN ROOM HW TEMP 3.0 -36.2 0.00 -4.03 50 22.20 LOWER FIN ROOM HW TEMP 11.0 98.0 3.78 3.78 3.78	21.10 WATER HEATER SHUTOFF-KITCHEN 0.1 0.4 0.00 0.03 219 21.20 WATER HEATER SHUTOFF-PIN RM 0.1 0.4 0.00 0.02 219 22.10 LOWER KITCHEN HW TEMP 15.0 20.0 2.50 10.81 50 22.20 LOWER PIN ROCM HW TEMP 3.0 -36.2 0.00 -4.03 50 23.00 HOT WATER BOOSTERS 11.0 88.0 3.78 3.78 333	NA	20.00	WATER HEATER TEMP CONTROL	0.0		00.0	0.00	0	SEE PROJECT 21
22.10 LOWER KITCHEN HW TEMP 0.1 0.4 0.00 0.02 219 22.20 LOWER KITCHEN HW TEMP 15.0 20.0 2.50 10.81 50 22.20 LOWER FIN ROOM HW TEMP 3.0 -36.2 0.00 -4.03 50	21.20 WATER HEATER SHUTOFF-PIN RW 0.1 0.4 0.00 0.02 219 22.10 LOWER RITCHEN HW TEMP 15.0 20.0 2.50 10.81 50 22.20 LOWER PIN ROOM HW TEMP 3.0 -36.2 0.00 -4.03 50 23.00 HOT WATER BOOSTERS 11.0 88.0 3.78 3.78 333	2077-03	21 10	WATER HEATER SHITTOFF-KITCHEN	0.1			0.03	219	NOT RECOMMENDED
22.20 LOWER FITCHEN HW TEMP 15.0 20.0 2.50 10.81 50 22.20 LOWER PIN ROOM HW TEMP 3.0 -36.2 0.00 -4.03 50 0.00 11.0 98.0 3.78 3.33	22.10 LOWER KITCHEN HW TEMP 15.0 20.0 2.50 10.81 50 22.20 LOWER PIN ROOM HW TEMP 3.0 -36.2 0.00 -4.03 50 23.00 HOT WATER BOOSTERS 11.0 88.0 3.78 3.78 3.33	86-175	21 20	WATER HEATER SHITTOFF-PIN RM		0.4		0.02	219	NOT RECOMMENDED
22.20 LOWER NEOW HY TEMP 3.0 -36.2 0.00 -4.03 50	22.20 LOWER PIN ROOM HW TEMP 3.0 -36.2 0.00 -4.03 50 23.00 HOT WATER BOOSTERS 11.0 88.0 3.78 3.78 3.33	07-177	22 10	TODER KITCHEN HU TEMP	15.0			10.81	50	RECOMMENDED
22.20 LOWER FIN NOVEMEN LEGIT 3.0 -30.0 -30.0 -3.23	23.00 HOT WATER BOOSTERS 11.0 88.0 3.78 3.78 333	55-177	01.77	DIN	0.00			7, 03	0 5	NOT RECOMMENDED
	23.00 HOL MAIER BUNDLERS . 11.0 00.0 3.70 3.70 333	1221-31	07.77		1.0			200	22.2	RECOMMENDED

* REFER TO VOLUME II FOR SUPPORT CALCULATIONS NA - NOT APPLICABLE ** REFER TO VOLUME III FOR SUPPORT CALCULATIONS MH - MANHOUR

ECO SUMMARY

KS		NOT RECOMMENDED	HOOD OFF WHEN NOT IN USE	NOT REQUIRED	AIR BALANCE W/KITCHEN IS OK	RECOMMENDED	ALREADY SCHEDULED	COMPLETE BALANCE SCHEDULED	UPGRADE ALREADY SCHEDULED	NO CHANGE REQUIRED	RECOMMENDED	RECOMMENDED	NOT RECOMMENDED	R ECOMMENDED		NO DISHWASHER IN BUILDING	NOT RECOMMENDED	NOT RECOMMENDED		NOT RECOMMENDED	NOT RECOMMENDED	ALREADY IN USE	NOT RECOMMENDED	NOT REQUIRED	RECOMMENDED	NOT RECOMMENDED	NOT RECOMMENDED	NOT RECOMMENDED	Cauling a cont	NO CHANGE REQUIRED			RECOMMENDED	RECOMMENDED	SEE PROJECT 21	RECOMMENDED	RECOMMENDED	RECOMMENDED	RECOMMENDED	NOT REGISTRED	NOT RECOMMENDED	REOUTRED	RECOMMENDED	AIR BALANCE W/KITCHEN IS OK
I REMARKS		NOT R	HOOD	NOT R	AIR B	RECOM	ALREA	COMPL	UPGRA	NO CH	RECOM	RECOR	NOT R	RECOR	NOT R	NO DI	NOT B	NOT F		NOT B	NOT R	ALREA	NOT R	NOT F	RECOR	NOT E	NOT F	NOT	10 011	NO CE	NOCE		RECOR	RECOR	SEE	NOT F	NOT	RECOR	RECON	NOT	TON	TON		AIR
CONTRACT COST DOLLARS		0	0	.0	0	1515	0	0	0	0	30	457	8961	475	4913	0	7345	19223		4439	3764	0	2891	0	1.7	5717	4516	3285	c	o (0	•	27	27	0	82	82	20	50	2	2455	0	46.87	0
SIR		0.0	00.0	0.00	00.0	1.20	00.0	0.00	00.0	00.0	13.63	2.68	0.55	11.33	19.0	0.00	0.50	0.19		0.08	0.75	0.00	0.52	0.00	2.63	0.10	49.0	0.18	0	00.0	00.0		17.52	5.58	0.00	0.16	0.03	15.83	51.52	00.0	0.36	00.0	70.0	0.00
PAYBACK YEARS		0.0	0.00	0.00	00.0	13.80	00.0	00.0	00.0	0.00	0.07	5.94	0.00	2.12	0.00	0.00	00.0	0.00		0.00	00.0	0.00	00.0	00.0	1.70	0.00	00.0	00.0	0	00.0	00.0		0.52	1.64	0.00	0.00	00.0	0.58	0.17	000	00.0	00.0	00.0	00.0
DOLLAR I SAVINGS PER YR		0.0	0.0	0.0	0.0	109.8	0.0	0.0	0.0	0.0	402.0	77.0	465.0	224.0	239.0	0.0	279.0	279.0		24.0	188.0	0.0	105.0	0.0	10.0	35.0	170.0	43.0	(0.0	0.0		51.7	16.5	0.0	1 -4	0.3	86.4	2 93 5	0.00	105.0	0.00	22.0	0.0
ENERGY SAVINGS MBTU/YR		0.0	0.0	0.0	0.0	26.0	0.0	0.0	0.0	0.0	93.7	29.0	113.2	49.3	44.0	0.0	61.2	61.2		4.6	34.2	0.0	20.5	0.0	1.6	6.4	23.9	8.7	(0.0	0.0		14.0	4.0	0.0	4.0		36.0	0.06	0.00	2. 2.6	0.17	12.3	0.21
DESCRIPTION	(DELINE)	CHANGE TO VAV SYSTEM	9	KITCHEN MAKEUP AIR			ECONOMIZER CYCLE	BALANCE HVAC	UPGRADE CONTROLS	DINING ROOM OPERATIONS	HVAC OPERATIONS	NIGHT SETBACK	INFRARED HEATERS	PIPE INSULATION	KITCHEN HEAT RECOVERY	DISHWASHER HEAT RECOVERY	KITCH EXH HEAT RECOV AIR/AIR	KITCH EXH HEAT RECOV-RUNAROUND		PEDIICE GLASS AREA	VECTIBILES	SOLAR PILMS	INSHITATED PANELS	CAUTKING	WEATHER STRIPPING		STORM WINDOWS	INSULATION		EFFICIENT LIGHTING	REPL INCAND, W/FLUORESCENT	NEDUCE LIGHTING LEVELS	INSULATE WATER HEATER-KITCHEN	INSHIATE WATER HEATER-LOCKERS	WATER HTR TEMP CNTRL	WATER HEATER SHITOFF-KITCHEN	WATER HEATER SHITOFF-LOCKER	LOWER DOM HW TEMP-KIT	TOURR DOM HW TEMP_IVE / DRMC	HOT WATER ROOSTERS	CHANCE TO VAV SVSTEM	DANCE HOOD CHINGE	VITCHEN MAYELD ATP	POSITIVE KITCHEN PRESSURE
PROJECT	27 (CONT	27.00	28.00	29.00	30.00	31.00	35.00	36.00	38.00	39.00	40.00	44.00	46.00	49.00	52.00	54.00	55.10	55.20	020		00.	3.00	00.	00.5	00.9	7.00	8.00	00.6		12.00	13.00	**	19.10	19.20	20.00	21.10	21.20	22.12	22 20	23.20	23.00	00.77	20.00	30.00
REFERENCE PAGE	RHITDING 9227 (CONTINHED)	NA	NA	NA.	NA	9227-48	NA	NA	NA	NA	9227-52	9227-55	9227-58	9227-62	9227-65	NA	9227-70	9227-74	BUILDING 20020	20020-1	CEN-8	GENTO	3-0000c	4.0202	20020-7	20020-12	20020-15	20020-18	ELECTRICAL	NA	NA	MECHANICAL	20020-21	20020-25	NA NA	20020-20	20020-34	20020-39	66-02002	20020-43	NA 00000	75-0707	NA COOCC	20020-50

* REFER TO VOLUME II FOR SUPPORT CALCULATIONS NA - NOT APPLICABLE ** REFER TO VOLUME III FOR SUPPORT CALCULATIONS MH - MANHOUR

REFERENCE	PROJECT	DESCRIPTION	ENERGY	DOLLAR	PAYBACK	SIR	CONTRACT	REMARKS
	NUMBER		SAVINGS MBTU/YR	CO	YEARS		COST	
DING 200	BHILDING 20020 (CONTINUED)	INUED)						
20020-56	31.00	AIR CURTAINS	0.9	18.1	0.00	0.62	788	NOT RECOMMENDED
		ECONOMIZER CYCLE	13.7	52.0	0.00	0.15	2905	NOT RECOMMENDED
	36.00	BALANCE HVAC SYSTEM	90.0	505.0	00.0	0.94	2227	NOT RECOMMENDED
	38.00		0.0	0.0	0.00	00.0	0	SEE PROJECTS 27, 35, AND 44
•	39.00	DINING ROOM OPERATIONS	0.0	0.0	00.0	00.0	0	NO CHANGES REQUIRED
20020-66	40.00	HVAC OPERATIONS	171.8	624.0	0.05	20.95	30	RECOMMENDED
	44.00	NIGHT SETBACK	114.0	519.0	0.88	11.71	457	RECOMMENDED
	00:47	INFRARED HEATERS	0.0	0.0	00.0	00.0	0	CEILING TOO LOW
62	00.07	DIDE INCHIATION	17.2	7.711	1.00	19.50	118	RECOMMENDED
	47.00	CHOCKBOOK UENTITATION	4 7	3	00.0	0.06	5111	NOT RECOMMENDED
	20.10	VITOURN URAT BECOMED	6.9	260.0	000	0.45	6 19 3	NOT RECOMMENDED
6/-0	22.00	ALLCHEN REAL NECOVERS	9.0	0.00	000			NO DISHUASHER IN RIDG
	54.00	DISHWASHER HEAT RECOVERY	0.0	0.0	00.0	00.0	734.5	NOT DECOMMENDED
	55.10	KITCH EXH HEAT RECOV AIR/AIR	0.80	400.0	00.0	0.00	10000	NOW DECOMMENDED
20020-88	55.20	KITCH EXH HEAT RECOV-RUNAROUND	59.6	408.0	00.0	0.24	19223	NOI NECOMMENDED
BUILDING 30101	101							
ANCHITECTURAL TOO	- Tal	PENICE CLASS ABEA	153.2	852.0	0.00	0.40	31907	NOT RECOMMENDED
1-10100	00.1	MEDICE GLASS ANEA	2 7 6	0 001	000	0 75	3764	NOT RECOMMENDED
GEN-8	2.00	VESTIBULES	24.5	12000	00.0	0.10	3 86 6	NOT PECOMMENDED
30101-4	3.00	SOLAR FILMS	122.4	0.677	00.0	0.00	2000	NOT DECOMMENDED
30101-7	4.00	INSULATED PANELS	7.00	0.200	00.0	60.0	0777	NOW DESCRIPTION
NA	2.00		0.0	0.0	0.00	00.0	0 00	NOI REQUIRED
30101-10	00.9	WEATHER STRIPPING	10.3	0.69	00.0	0./4	380	NOI RECUMPENDED
30101-16	7.00	DOUBLE GLAZING	59.4	700.0	0.00	0.35	39013	NOT RECOMMENDED
30101-19	8.00	STORM WINDOWS	17.6	893.0	15.04	1.30	13433	RECOMMENDED
30101-22	9.00	INSULATION	6.96	0.009	0.00	0.10	13653	NOT RECOMMENDED
ELECTRICAL								
NA	12.00	EFFICIENT LIGHTING	0.0	0.0	0.00	00.0	0	LIGHTING IS EFFICIENT
NA	13.00	REPLACE INCAN W/FLUORESCENT	0.0	0.0	00.0	0.00	0	LIGHTING IS FLUORESCENT
NA	14.00	REDUCE LIGHT LEVELS	0.0	0.0	0.00	00.0	0	LEVEL IS LOW ENOUGH
NA	16.00	TRANSFORMER OVERVOLTAGE	0.0	0.0	00.0	00.0	0	NO OVERVOLTAGE EXISTS
MECHANICAL	**							
30101-25	19.00	WATER HEATER INSULATION	1.0	9.9	4.11	3.01	27	RECOMMENDED
	20.00	WATER HEATER TEMP CONTROL	0.0	0.0	0.00	00.0	0	SEE PROJECT 21
	21.00	WATER HEATER SHUTOFF	0.0	0.0	00.0	00.0	0	24 HR SCHEDULE
200	22.00	LOWER DOMESTIC HW TEMP	11.0	23.1	2.17	8.97	50	RECOMMENDED
	23.00	HOT WATER BOOSTERS	39.0	428.0	0.78	11.06	333	RECOMMENDED
	22.00	CHANGE TO VAV SYSTEM	161.1	614.0		0.53	9820	NOT RECOMMENDED
	00.72	DANCE HOOD CHIMDER				000		HOOD IS OFF WHEN NOT IN USE
	00.00	WITHOUGH MANGIN ATR			00.0		0 0	ALREADY IN USE
	00.67	NATIONEM PRANCISM SERVICES			000			BAI ANCE U/KITCHEN IS OK
	30.00	POSITIVE KITCHEN PRESSURE	0.0	0.0	0.00	0.00) i	CI NI
	31.00	AIR CURTAINS	14.0	53.0		0.64	1515	NOT RECUMPENDED
30101-44	35.00	ECONOMIZER CYCLE	172.1			0.44	12563	NOT RECOMMENDED
	36.00	BALANCE HVAC	188.5	1033.0		0.77	5543	
	38.00	UPGRADE HVAC CONTROLS	0.0			0.00	0	SEE PROJECTS 27 AND 35
	39.00	2	0.0	0.0	00.0	0.00	<	NO CHANGES REQUIRED

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REFERENCE PROJECT	r DESCRIPTION	DNEDOV	DOLTAD	DAUDACE	SIR	CONTRACT	REMARKS
NUMBER		SAVINGS MBTU/YR	SAVINGS PER YR	YEARS	•	COST	
BUILDING 30101 (CONTINUED	TINUED)						
30101-52 40.00	HVAC OPERATIONS	594.3	2234.0	0.01	75.10	30	RECOMMENDED
44.00	NIGHT SETBACK CONTROL	0.0	0.0	0.00	0.00	0	24 HOUR OCCUPANCY
46.00	INFRARED HEATERS	0.0	0.0	0.00	0.00	0	CEILING HEIGHT TOO LOW
30101-59 49.00	PIPE INSULATION	18.4	117.0	1.07	17.85	125	RECOMMENDED
	KITCHEN HEAT RECOVERY	116.0	941.0	8.25	1.41	1760	RECOMMENDED
	DISHWASHER HEAT RECOVERY	0.0	0.0	00.0	0.00	0	NO DISHWASHER IN BUILDING
30101-68 55.10	KITCH EXH HEAT RECOV AIR/AIR	71.5	490.0	00.0	0.75	7345	NOT RECOMMENDED
30101-72 55.20	KITCH EXH HEAT RECOV-RUNAROUND	71.5	490.0	00.0	0.29	19223	NOT RECOMMENDED
BUILDING 30501 MECHANICAL							
34.00	SEAL AHU LEAKS	0.0	0.0	00.0	00.0	0	BLDG HAS CABINET FAN COILS
BUILDING 40110 ARCHITECTURAL **							
20110 1 1 00	ATOM STATE OF ADDA	13 %	0 981	00	900	77.08	NOT PECONMENDED
	NEDUCE GLASS ANEA	4.62	1000	000	0.20	3757	NOT DECOMPENED
	VESTIBULES	34.2	100.0	00.0	0.73	2/04	NOT RECOMMENDED
	SULAR FILMS	30.2	197.0	0.00	0.90	606	NOT RECOMMENDED
40110-7 4.00	INSULATED PANELS	31.3	192.0	00.0	0.64	4/60	NOT RECOMMENDED
	CAULKING	0.0	0.0	0.00	0.00	0	NOT REQUIRED
	WEATHER STRIPPING	6.3	40.0	0.00	0.74	237	NOT RECOMMENDED
		40.0	272.0	0.00	64.0	9168	NOT RECOMMENDED
	STORM WINDOWS	55.3	376.0	8.04	2.07	3024	RECOMMENDED
40110-21 9.00	INSULATION	25.9	160.0	0.00	19.0	3791	NOT RECOMMENDED
ELECTRICAL							
12.00	EFFICIENT LIGHTING	0.0	0.0	0.00	0.00	0	NO CHANGE REQUIRED
13.00	REPLACE INCAN W/FLUORESCENT	0.0	0.0	00.0	0.00	0	NO CHANGE REQUIRED
14.00	REDUCE LIGHT LEVELS	0.0	0.0	0.00	0.00	0	NO CHANGE REQUIRED
MECHANICAL **							
40110-24 19.00		1.0	8.4	3.23	3.84	27	RECOMMENDED
20.00	WATER HEATER TEMP CONTROL	0.0	0.0	00.0	0.00	0	SEE PROJECT 21
21.00		0.0	0.0	0.00	00.0	0	ULE
22.00	LOWER DOMESTIC HW TEMP	0.0	0.0	00.0	0.00	0	NOT REQUIRED - 140 F
40110-28 23.00	HOT WATER BOOSTERS	7.0	207.0	1.61	5.75	333	RECOMMENDED
40110-33 27.00	CHANGE TO VAV SYSTEM	35.5	135.0	0.00	0.23	4910	NOT RECOMMENDED
28.00	RANGE HOOD SHUTOFF	0.0	0.0	00.0	00.0	0	HOOD OFF WHEN NOT IN USE
29.00	KITCHEN MAKEUP AIR	0.0	0.0	00.0	00.0	0	NO CHANGES REQUIRED
30.00	POSITIVE KITCHEN PRESSURE	0.0	0.0	00.0	00.0	0	KITCHEN BALANCE IS OK
40110-36 31.00	AIR CURTAINS	3.0	36.0	0.00	0.41	1515	NOT RECOMMENDED
40110-40 35.00	ECONOMIZER CYCLE	42.7	163.0	00.0	0.34	4047	NOT RECOMMENDED
	BALANCE HVAC SYSTEM	100.2	583.0	3.23	1.29	1883	RECOMMENDED
	UPGRADE HVAC CONTROLS	0.0	0.0	00.0	00.0	0	NOT REQUIRED-ALL NEW
39.00	DINING ROOM OPERATIONS	0.0	0.0	0.00	0.00	0	NO CHANGES REQUIRED
40110-46 40.00	HVAC OPERATIONS	63.1	210.0	0.14	7.02	30	RECOMMENDED
		0.0	0.0	0.00	0.00	0	24 HOUR OCCUPANCY

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REMARKS	NOT RECOMMENDED NEW INSULATION NOT RECOMMENDED NO DISHWASHER IN BUILDING NOT RECOMMENDED NOT RECOMMENDED	NOT RECOMMENDED NOT RECOMMENDED NOT RECOMMENDED NOT RECOMMENDED NOT REQUIRED AT THIS TIME NOT RECOMMENDED NOT RECOMMENDED NOT RECOMMENDED	NO CHANGE REQUIRED NO CHANGE REQUIRED NO OVERVOLTAGE EXISTS	SEE PROJECT 21 24 HOUR SCHEDULE RECOMMENDED NOT RECOMMENDED HOCD OFF WHEN NOT IN USE ALREADY IN USE OUT RECOMMENDED NOT RECOMMENDED NOT RECOMMENDED ALANCE IS SATISFACTORY CONTROLS ARE NEW NO CHANGE REQUIRED 24 HOUR SCHEDULE 24 HOUR OCCUPANCY NOT RECOMMENDED
CONTRACT COST DOLLARS	9941 0 4990 0 7345 19223	12136 3764 1317 11037 0 0 13863 4575 3518	,	27 0 0 50 333 4910 0 1515 4047 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
SIR	0.54 0.00 0.74 0.00 0.75	0.38 0.75 0.89 0.00 0.00 0.47 1.97	00.00	111.48 0.00 0.00 34.36 10.40 0.26 0.00 0.00 0.00 0.00 0.00 0.00 0.0
PAYBACK YEARS	0.00	0.00 0.00 0.00 0.00 0.00 0.00	0.000	1.08 0.00 0.00 0.37 0.83 0.00 0.00 0.00 0.00 0.00 0.00 0.00
DOLLAR B SAVINGS N PER YR	757.0 0.0 322.0 0.0 490.0	296.0 188.0 282.0 439.0 0.0 0.0 389.0 146.0	0000	25.0 0.0 0.0 0.0 134.5 401.0 151.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
ENERGY SAVINGS MBTU/YR	185.1 0.0 38.0 0.0 71.5	50.6 34.2 43.0 71.4 0.0 57.3 23.7	0.000	4.0 0.0 0.0 27.0 35.0 39.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0
DESCRIPTION S	IINUED) INFRARED HEATERS PIPE INSULATION KITCHEN HEAT RECOVERY DISHWASHER HEAT RECOVERY KITCH EXH HEAT RECOV AIR/AIR KITCH EXH HEAT RECOV-RUNAROUND	REDUCE GLASS AREA VESTIBULES SOLAR FILMS INSULATED PANELS CAULKING WEATHER STRIPPING DOUBLE GLAZING STORM WINDOWS INSULATION	EFFICIENT LIGHTING REPLACE INCAN W/FLUORESCENT REDUCE LIGHT LEVELS TRANSFORMER OVERVOLTAGE	WATER HEATER INSULATION WATER HEATER TEMP CONTROL WATER HEATER SHUTOFF LOWER DOMESTIC HW TEMP HOT WATER BOOSTERS CHANGE TO VAV SYSTEM KITCHEN MAKEUP AIR ROSITIVE KITCHEN PRESSURE AIR CURTAINS ECONOMIZER CYCLE BALANCE HVAC UPCRADE HVAC UNTURNERED HEATERS PIPE INSULATION KITCHEN HEAT RECOVERY KITCH EXH HEAT RECOVENY
PROJECT NUMBER	40110 (CONTINUED) 46.00 INFRAB 49.00 PIPE 1 52.00 KITCHE 54.00 DISHWA 55.10 KITCH 55.20 KITCH	AL ** 1.00 1.00 1.00 3.00 4.00 5.00 7.00 8.00 9.00	12.00 13.00 14.00 16.00	19.00 20.00 21.00 22.00 22.00 27.00 28.00 38.00 38.00 40.00 44.00 44.00 44.00 55.10
REFERENCE PAGE	BUILDING 40 40110-49 NA 40110-53 NA 40110-59 40110-63	BUILDING 50101. ARCHITECTURAL ** 50101-1 1.00 GEN-8 2.00 50101-4 3.00 50101-7 4.00 NA 5.00 NA 6.00 50101-10 7.00 50101-10 7.00 50101-11 8.00 50101-16 9.00	NA NA NA NA	MECHANICAL 50101-19 NA 50101-23 50101-23 50101-33 NA NA NA NA NA NA NA NA NA NA

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	LED		T 2		10N 10N 10N 10N 10N 10N 10N
	E EKISTS TO BE INSTAL		(DED LAGE 1S CORRI LS ACCEPTABLE	ED	STUDY REVALIDATION
REMARKS	NO OVERVOLTAGE EXISTS NEW CONTROLS TO BE INSTALLED	RECOMMENDED	NOT NECESSARY NOT RECOMMENDED BASEWIDE-VOLTAGE IS CORRECT CURRENT LEVELS ACCEPTABLE	NOT RECOMMENDED	NOT RECOMMENDED PREVIOUS STUDY
CONTRACT COST DOLLARS	0 0	16009 16009 16009 18246 24211 24211 16009 16009 9825	0 10042 0 0	250000	0 22 22 25 25 26 29 31 81950 9039 16226 IN GALLONS 347582
SIR	0.00	1.57 1.57 1.58 1.58 1.08 2.45 1.57 1.57 1.57	0.00 28 0.00	26	.00 0.08 .79 18.72 .69 5.06 .64 22.43 .44 6.09 .58 25.19 .29 6.90 .00 0.62 .35 1.26 .28 3.54
PAYBACK YEARS	0.00	7.30 7.30 7.27 7.27 7.27 10.26 4.56 7.30 7.30 7.30 5.99	0.00	00.0	** 0.00 0.79 1.69 0.64 1.44 0.58 1.29 0.00 13.35 3.28 3.28
DOLLAR P SAVINGS Y PER'YR	0.0	2194.0 2194.0 2194.0 2508.0 2508.0 2359.0 2359.0 2194.0 2194.0	0.0 -330.0 0.0 0.0	-72533.0	SPECIFIC_EGO_E 0.0 6.2 3.3 13.0 8.6 4.7 11.1 50.0 6.2 24.0 93.5 5690.0 118.0 67.0 67.0 68.0 69.0
ENERGY SAVINGS MBTU/YR	0.0	269.9 269.9 269.9 301.6 301.6 641.3 1375.8 269.9 269.9 269.9 394.8	0.0 -86.6 0.0 0.0	32850.0	OF 14 14 151 151
DESCRIPTION	TRANSFORMER OVERVOLTAGE UPGRADE HVAC CONTROLS	EFFICIENT LICHTING	IMPROVE POWER FACTOR TRANSFORMER LOADING TRANSFORMER OVERVOLTAGE REDUCE STREET LIGHTING	WOOD CHIP/REFUSE MIX	HIDE ENERGY PLAN REEVALU WH INSUL-40 GAL NG WH INSUL-40 GAL EL WH INSUL-40 GAL EL WH INSUL-80 GAL EL WH INSUL-80 GAL EL WH INSUL-80 GAL EL WH INSUL-120 GAL EL WH INSUL-120 GAL EL WH INSUL-120 GAL EL VARIABLE AIR VOLUME ROOF SPRAY COOLING FLUSH VALVE RESTRICTORS NO ENERGY SAVINGS ASSOCIAT FLUOR LIGHTING LOAD RED.
PROJECT NUMBER	5 <u>0105</u> 16.00 28.00	L 4NGARS L 4x L 7x 12.01 12.02 12.03 12.04 12.05 12.06 12.07 12.09 12.10	L ** 11.00 115.00 17.00	1 ** 48.00	EATCH BASI BV-1.00 BV-2.01 BV-2.02 BV-2.03 BV-2.04 BV-2.06 BV-2.06 BV-3.00 BV-4.00 BV-4.00 BV-6.00
REFERENCE PAGE	BUILDING 50105 ELECTRICAL NA 16. MECHANICAL NA 38.	AIRCRAFT HANGARS ELECTRICAL ** HANGAR-1 12.01 HANGAR-5 12.02 HANGAR-13 12.04 HANGAR-17 12.05 HANGAR-21 12.06 HANGAR-25 12.07 HANGAR-27 12.09 HANGAR-37 12.10 HANGAR-37 12.10 HANGAR-47 12.11	BASEWIDE ELECTRICAL NA BASEWIDE-1 NA NA NA NA	MECHANICAL INCIN-1	BLACK 6 V B&V-1 B&V-1 B&V-7 B&V-7 B&V-10 B&V-13 B&V-16 B&V-22 B&V-25 B&V

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EMCS ECO SUMMARY

REFERENCE	PROJECT	DESC	DESCRIPTION	ENERGY	DOLLAR	PAYBACK	SIR	CONTRACT	REMARKS
PAGE	NUMBER			SAVINGS MBTU/YR	SAVINGS PER YR	YEARS		COST DOLLARS	
* BUILDING 106	106								
S	41.01	PKG	PKG 1-EMCS	130.0	-33.0	00.0	0.02	12065	
80	41.02	PKG	2-EMCS	172.0	130.0	0.00	0.20	12630	NOT RECOMMENDED
11	41.03	PKG	3-EMCS	150.0	-155.0	00.0	05	16061	NOT RECOMMENDED
* BUILDING	113		•						
25	41.01	PKG	1 - EMCS	1708.0	4331.0	00.0	0.59	99269	
28	41.02	PKG	2-EMCS	2265.0	6456.0	0.00	0.89	75595	
31	41.03	PKG	3-EMCS	2336.0	5626.0	0.00	0.56	91520	
34	41.08	PKG	8-EMCS	154.0	-411.0	0.00	04	22279	NOT RECOMMENDED
37	41.09	PKG	9-EMCS	309.0	1452.0	00.0	13	57167	
40	41.11	PKG	11 - EMCS	0.5	-738.0	0.00	45	14794	NOT RECOMMENDED
43	41.12	PKG	12-EMCS	54.0	-403.0	00.0	31	12187	NOT RECOMMENDED
94	41.13	PKG	13-EMCS	0.0	0.0	0.00	4.54	12421	RECOMMENDED
* BUILDING	2 908								
09	41.01	PKG	1-EMCS	744.0	1514.0	00.0	0.37	37059	
63	41.02	PKG	2-EMCS	890.0	1903.0	0.00	0.44	41690	_
99	41.03	PKG	3-EMCS	1030.0	1537.0	0.00	0.23	58408	
69	41.08	PKG	8-EMCS	32.7	-517.0	00.0	31	13317	NOT RECOMMENDED
72	41.09	PKG	9-EMCS	Ī	-1108.0	0.00	38	25126	
7.5	41.11	PKG	11 -EMCS	0.9	-668.0	00.0	45	13428	NOT RECOMMENDED
7.8	41.12	PKG.		57.0	-393.0	0.00	-,30	12186	NOT RECOMMENDED
. 18	41.13	PKG	13-EMCS	0.0	0.0	00.0	5.03	12421	RECOMMENDED
* BUILDING	9224								
89	41.01	PKG	1 -EMCS	94.0	-196.0	0.00	09	12127	NOT RECOMMENDED
92	41.02	PKG	2-EMCS	1.3	-34.0	00.0	95	322	
95	41.03	PKG	3-EMCS	94.0	-500.0	00.0	21	18264	NOT RECOMMENDED
* BUILDING	9227								
106	41.01	PKG	1 -EMCS	0.0	-405.0	0.00	30	12127	NOT RECOMMENDED
109	41.02	PKG	2-EMCS	0.09	-180.0	0.00	60	12691	
112	41.03	PKG	3-EMCS	4.7.4	-308.0	0.00	21	13810	
115	41.09	PKG	9-EMCS	10.9	-1225.0	0.00	43	25490	NOT RECOMMENDED
* BUILDING *	20020								
126	41.01	PKG	1 -EMCS	131.0	-16.0	0.00	0.03	12127	
129	41.02	PKG	2-EMCS	207.0	273.0	0.00	0.28	12691	
132	41.09	PKG	9-EMCS	0.7	-1253.0	0.00	45	25126	
135	41.13	PKG	3-EMCS	137.0	-302.0	0.00	12	18264	NOT RECOMMENDED
* BUILDING	30101								
146	41.01	PKG	1 -EMCS	50.4	-1175.0	0.00	36	30114	
149	41.02	PKG		43.0	-1324.0	0.00	38	32447	_
152	41.03	PKG	3-EMCS	119.2	-2330.0	0.00	37	28467	
155	41.09	PKG	9~EMCS	27.4	-1132.0	00.0	39	25126	_
158	41.11	PKG		0.8	-742.0	00.0	45	14902	NOT RECOMMENDED

CONTRACT REMARKS COST DOLLARS	14933 NOT RECOMMENDED 17497 NOT RECOMMENDED 23268 NOT RECOMMENDED 13317 25126 NOT RECOMMENDED 14902 NOT RECOMMENDED 20264 NOT RECOMMENDED 21457 NOT RECOMMENDED 30755 NOT RECOMMENDED 25126 NOT RECOMMENDED 25126 NOT RECOMMENDED 25126 NOT RECOMMENDED
SIR	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
PAYBACK YEARS	000000000000000000000000000000000000000
DOLLAR SAVINGS PER YR	-543.0 -677.0 -895.0 -629.0 -1215.0 -742.0 -848.0 -917.0 -1308.0
ENERGY SAVINGS MBTU/YR	30.2 29.1 47.3 8.0 9.0 0.8 20.2 18.1 10.9
DESCRIPTION	PKG 1-EMCS PKG 2-EMCS PKG 3-EMCS PKG 9-EMCS PKG 9-EMCS PKG 11-EMCS PKG 1-EMCS PKG 2-EMCS PKG 2-EMCS PKG 3-EMCS PKG 9-EMCS
PROJECT NUMBER	40110 41.01 41.02 41.03 41.08 41.09 41.11 41.01 41.03 41.03
REFERENCE PAGE	* BUILDING 170 173 176 179 182 182 185 * BUILDING 196 199 202 205